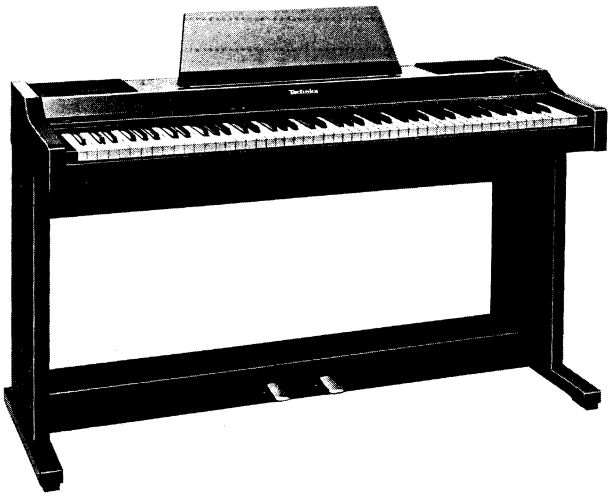
ORDER NO. EMID861178
A4

Service Manual

PCM Digital Piano

SX-PX6



(M), (MC),
(EN), (EI), (EH), (EB), (EF), (EZ), (EW), (EP), (EK),
(XT), (XL), (XR), (XS), (XD), (X), (XM), (XX), (XV)

AREAS

(M):	U.S.A.	(XT):	Taiwan
(MC):	Canada	(XL):	New Zealand
(EN):	Norway, Sweden, Denmark, Finland	(XR):	Australia
		(XS):	Malaysia, Singapore, South Africa
(EI):	Italy	(XD):	Saudi Arabia
(EH):	Holland	(X):	the Middle East, Indonessia, Hong Kong, the Philippines
(EB):	Belgium	(XM):	Mexico
(EF):	France, Austria	(XX):	Peru, Chile
(EZ):	Germany	(XV):	Venezuela, Ecuador, Panama. Colombia
(EW):	Switzerland		
(EP):	Spain		
(EK):	the United Kingdom		

Specifications

KEYBOARD	88 KEYS (16 NOTES POLYPHONIC)		
TONE	PIANO, Ⅰ, Ⅱ, ELECTRIC PIANO, HARPSICHORD, CLAVI, VIBETONE		
CHORUS	○		
TRANSPOSE	CONTROL (G~C~F♯)		
MIDI	PROGRAM CHANGE		
MODE SET	MODE SET	(MIDI)	OMNI ON, PROGRAM CHANGE, CHORUS, PEDAL
		(OTHERS)	MINIMUM RANGE, TUNE MODE
OTHERS	POWER SWITCH, MAIN VOLUME, LINE OUT TERMINALS (R/R+L, L), AUX TERMINAL (IN), PEDAL IN TERMINALS (SUSTAIN, SOFT), MIDI TERMINALS (OUT, IN), TUNE, HEADPHONE JACK, AC CORD INPUT, INITIAL KEY		
OUTPUT	20W×2		
SPEAKERS	16cm×2		
POWER REQUIREMENT	90W		
	AC 120/220/240V 50/60Hz, AC 120V 60Hz (NORTH AMERICA)		
DIMENSIONS (W×H×D) (without stand)	135.9cm×15.9cm×44cm (53-1/2″×6-1/4″×17-5/16″)		
NET WEIGHT (without stand)	33.5kg (73.9lbs.)		
ACCESSORIES	STAND, MUSIC RACK, DUST COVER, AC CORD		

STAND (SZ-S81W)

DIMENSIONS (W×H×D)	138.7cm×64.3cm×42.2cm (54-19/32″×25-5/16″×16-5/8″)
WEIGHT	18kg (39.6lbs)

*Specifications are subject to change without notice for further improvement.

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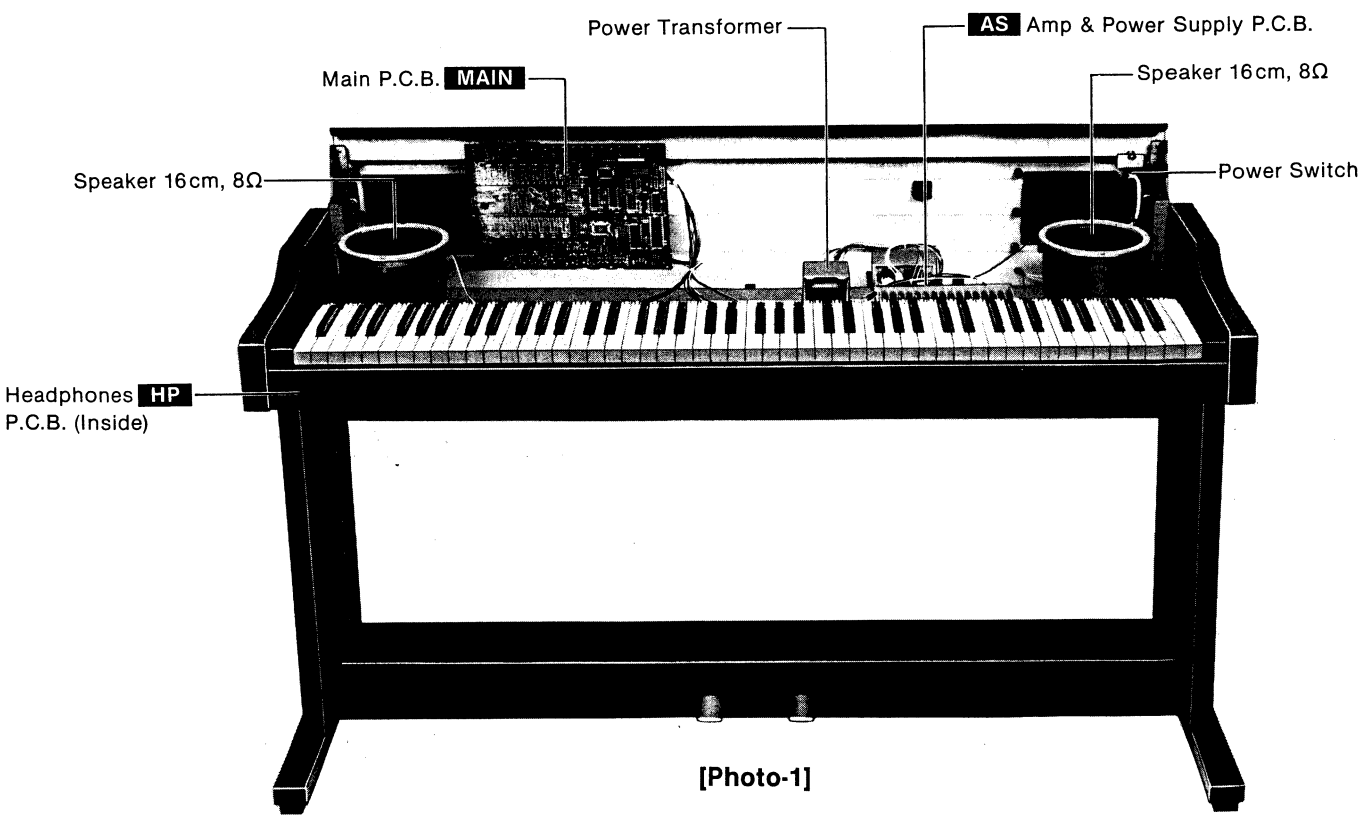
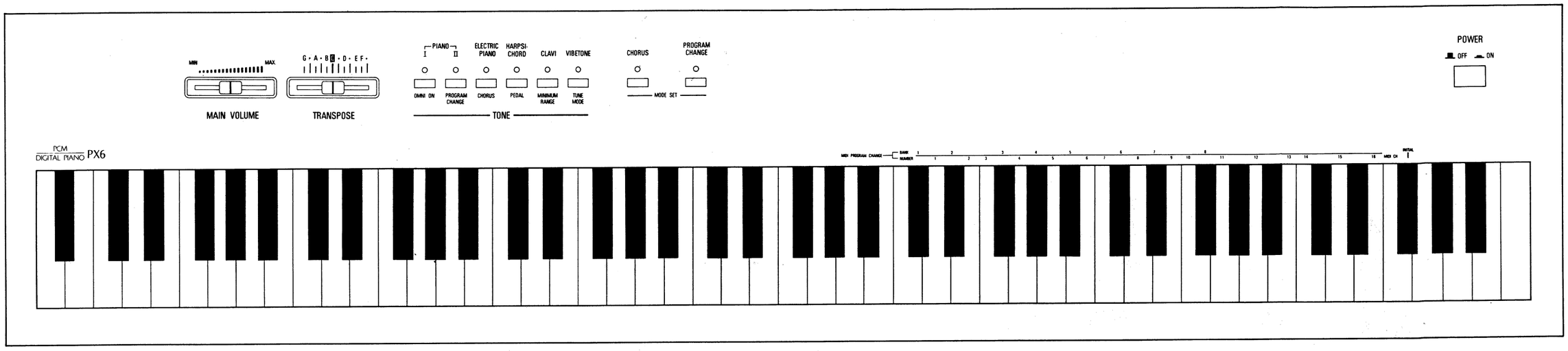
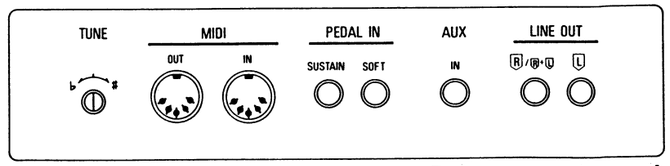
PARTS LOCATION



[Photo-1]

ARRANGEMENT OF CONTROL PANEL





Rear accessory panel

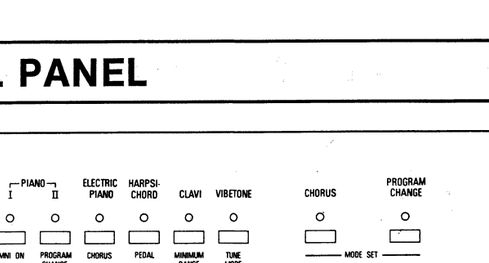
DISASSEMBLY PROCEDURE

1 **How to remove the music rack**

① Music rack can be removed upward.

2 **How to remove the top cover**

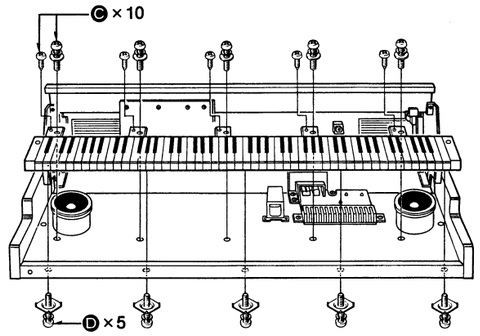
① Remove the 2 screws Ⓐ and 2 screws Ⓑ which fasten the top cover located under the shelf board.
② The top cover can be opened by lifting.



[Fig. 1]

3 **How to remove the keyboard**

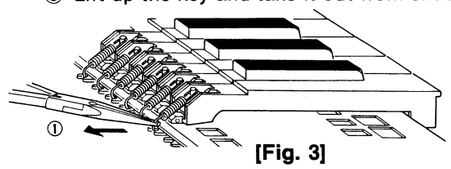
• Open the top cover according to procedure 2.
① Remove the 10 screws Ⓒ and 5 screws Ⓓ which fasten the keyboard.
② The keyboard can be removed.



[Fig. 2]

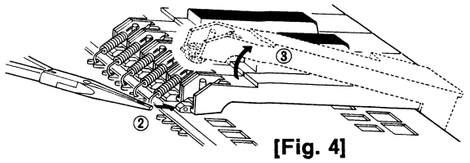
4 **How to remove the keys**

• Remove the keyboard according to procedure 3.
① Remove the spring from the key as shown Fig. 3.
② Pushing friction piece of key as shown Fig. 4. Key can be removed from chassis.
③ Lift up the key and take it out from chassis.



[Fig. 3]

Note:
In the case of disassembly black key remove the right and left white key at first and after that black key can be removed.



[Fig. 4]

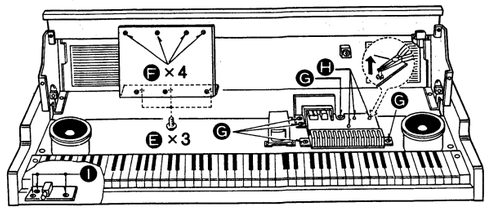
5 **How to remove the printed circuit boards**

* Open the top cover and pull out the connector of printed circuit boards.

MAIN Main P.C.B.
• Remove the 3 screws Ⓔ on the back of the top cover.
• Remove the 4 screws Ⓕ on the main P.C.B.

AS Amp & Power Supply P.C.B.
• Remove the 5 screws Ⓖ which fasten the amp unit.
• Release the 3 claws Ⓗ of P.C.B. holder to remove the Amp & power supply P.C.B.

HP Headphones P.C.B.
• Remve the 3 screws Ⓘ on the headphones P.C.B.



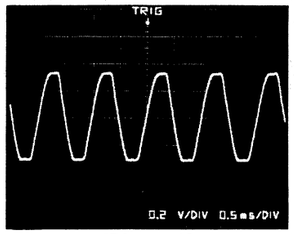
[Fig. 5]

ADJUSTMENT PROCEDURE

ADJUSTMENT	MEASURING CONDITIONS	EQUIPMENT	ADJUSTMENT CIRCUIT BOARD	ADJ. POINT	CONNECT METER TO	METER READING
BBD bias	Any position	Oscilloscope and Oscillator	MAIN P.C.B.	VR1	Check point ⑭	Photo-2
	1. Connect the oscilloscope to check point ⑭ of MAIN P.C.B. 2. Input 1kHz sine wave to IC20-③ pin by oscillator through capacitor of less than 50V 1µF. Then adjust the output level of the oscillator until the sine wave on the oscilloscope is clipped. 3. Adjust VR1 so that the output waveforms on the oscilloscope are evenly clipped at top and bottom.					

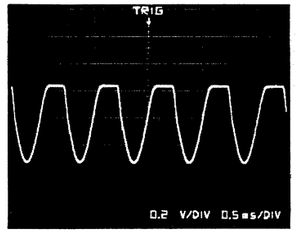
BBD bias adjustment

○: Good



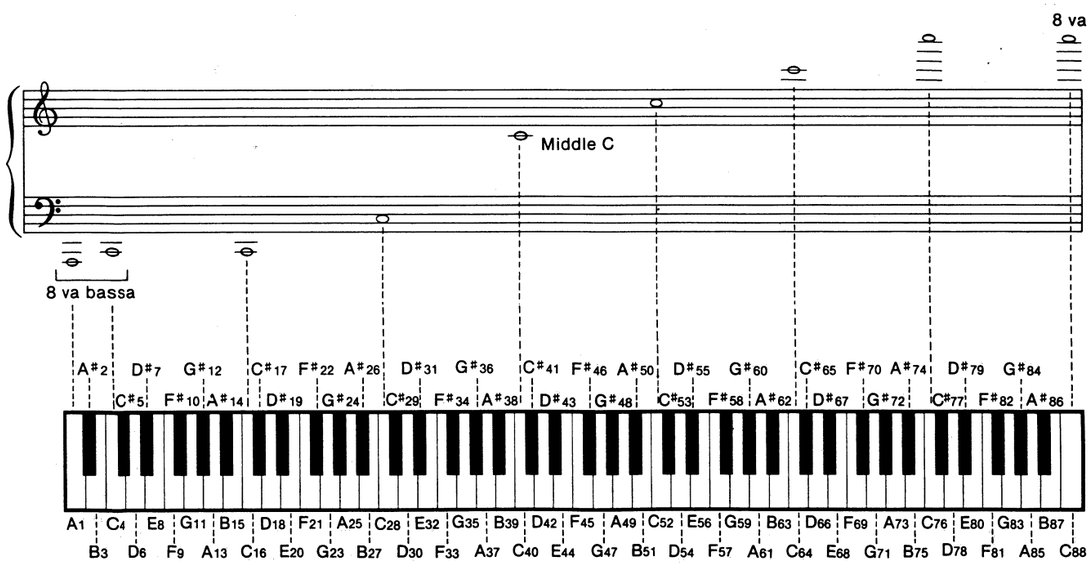
[Photo-2]

×: Fault



[Photo-3]

KEYBOARD RANGES



PRECAUTIONS BEFORE SERVICING

■ Precautions for the measurement:

1. The waveform was measured by "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may somewhat change due to variation of timing of measure.
2. The voltage shown in the photo is 1/10 of the actual value. However, the actual voltage is 10 times of as shown in this photo.
3. Measuring conditions of output waveforms
   - Tune ..... Center position
   - Transpose..... "C" position
   - Tone ..... Piano I
   - Main Volume....."Max" position
   - Key position.....C_{52}
4. The tone signal output varies with the level of key pressing force.
   In this measurement, the waveform obtained with maximum key pressing force is shown.
   However, the output level and waveform may very, depending on the timing and measuring instrument and other conditions in the measurement.

■ Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

■ Symptoms which appear to be signs of trouble

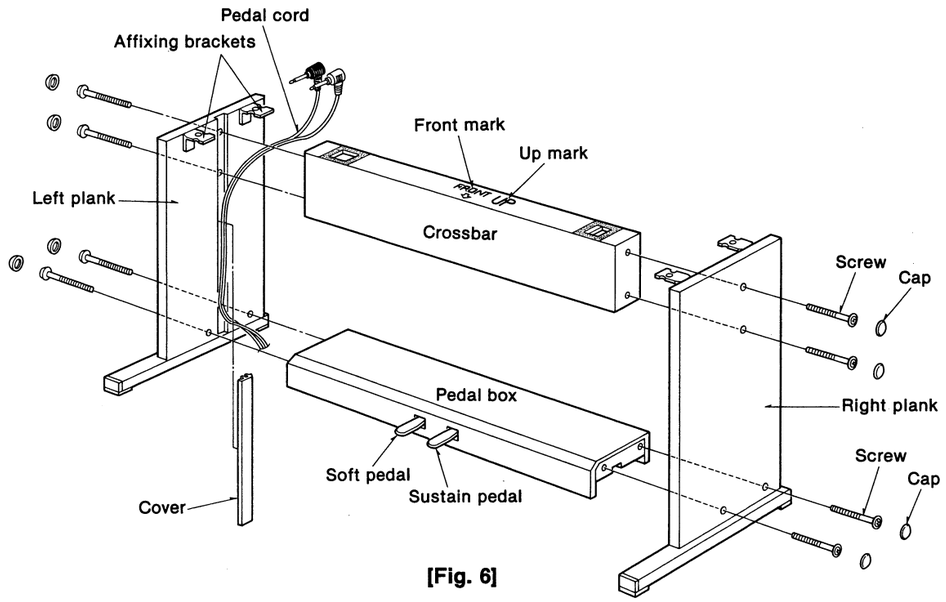
The following changes in performance may occur in the Technics digital piano but do not indicate trouble:

Phenomenon	Remedy
No sound	• No sound is made when main volume is at minimum. Properly adjust the sound volume. • No sound is produced if a key is pressed while holding down the **PROGRAM CHANGE** button.
With it transposed, there are some keys that make no sound.	When transposed to a lower key, the lowest keys equal to the number of notes transposed do not emit any sounds.
Only 16 tones are made when 17 more keys are pressed.	16 tones on the PX6 can be produced at one time.
The sustain effect is improper.	The tones of the far right keys are automatically sustained just like in an acoustic piano.
The pitch is diflected.	Fine adjustments of pitch can be made using knob which available on the rear accessory panel.

STAND (SZ-S81W)

■ ASSEMBLY

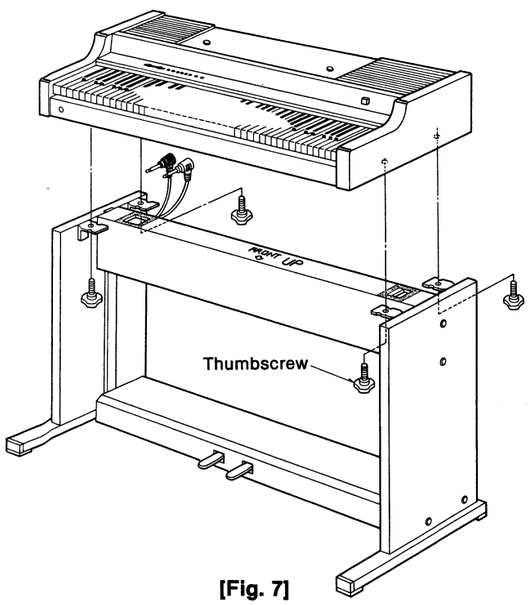
- Before assembling, remove the cover from the left plank.
- Position the crossbar between the side planks so that the UP mark is facing up and the FRONT mark is to the front.
- Place the pedal cords coming out of the pedal box so that they lie in the groove on the left side plank. Fit the cover in place over the groove.
- After assembling, put the caps on the screw heads.



[Fig. 6]

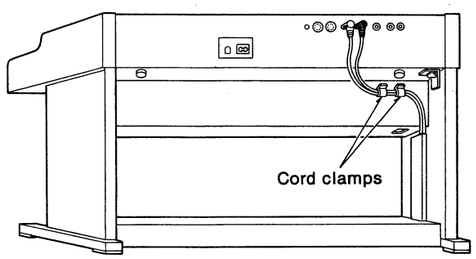
■ INSTALLATION AND CONNECTION

1. Secure the musical instrument to the stand with the 4 thumbscrews.



[Fig. 7]

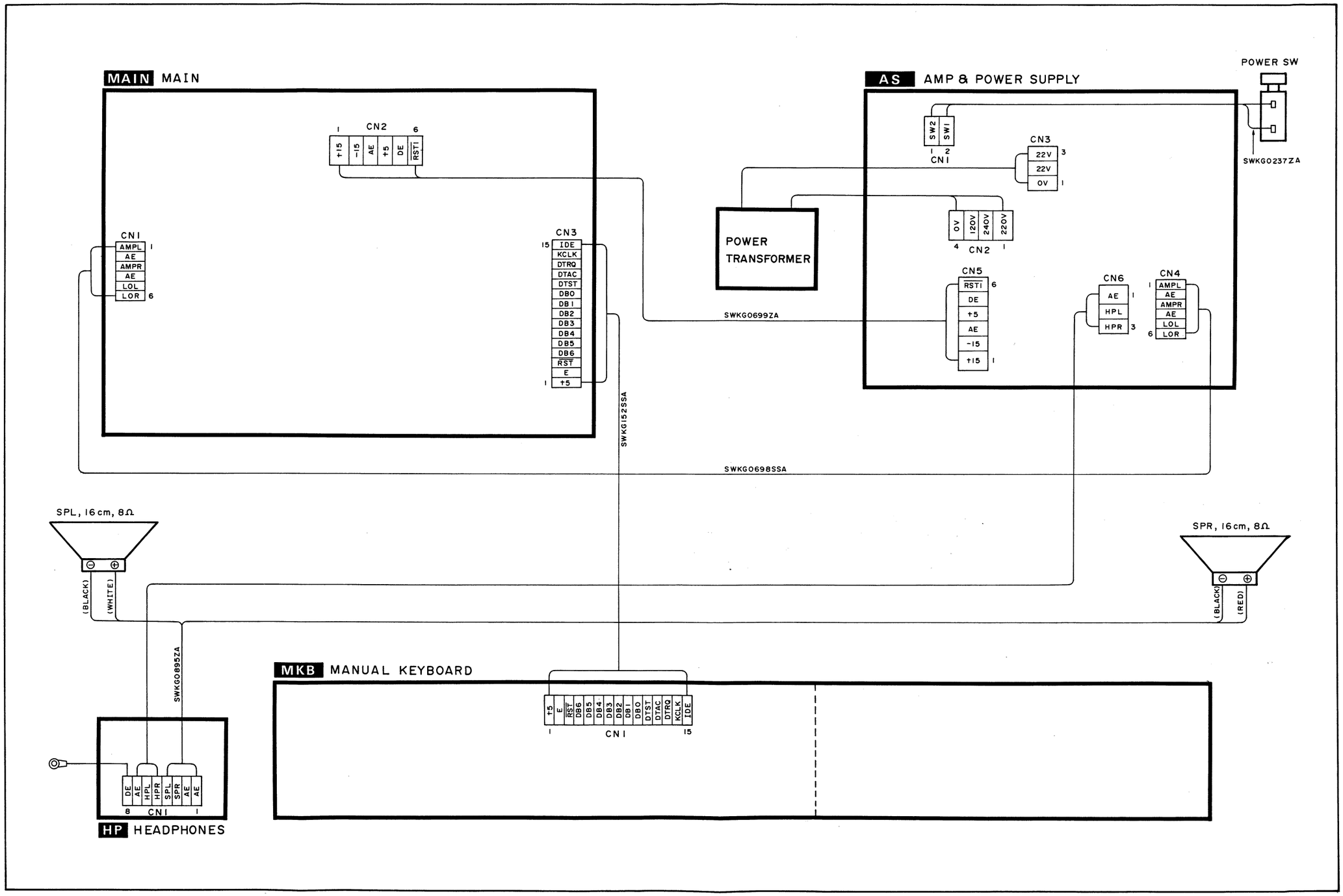
2. Insert the GRAY plug of the pedal cords into the SUSTAIN terminal on the rear of the musical instrument, and the BLACK plug into the SOFT terminal.
   - Use the cord clamps to secure the pedal cords as shown in the figure.



[Fig. 8]

MEMO

WIRING CONNECTION DIAGRAM



BLOCK DIAGRAM

1 2 3 4 5 6 7 8 9 10

A B C D E F

Tone Signals Control Signals

MKB1 **MKB2** MANUAL KEYBOARD CIRCUIT

IC2 IK bit ROM
IC1 Gate Array
Key Switches
IDE, KCLK
RST
CN1
CN3

MAIN MAIN CIRCUIT

IDE, KCLK
DTRQ, DTST, DTAC
DB0~DB6
RST
CN
RST1
+5
+15
-15
E

IC26: Microcomputer
PA0~PA7
PB2
AVCC
AN0
AVSS
TUNE
PB6 DTRQ
PB7 DTST
PB0 IDE
PB5 RES
PC0 TXD
PC2 SCK
PC1 RXD
PC4
PC3
PC6 CHO
PC7 CHO
PB4 BUSY
RST
RST1

IC30, 31, Q10
LED Driver
LED'S
CPIOS1, CPIOS2
Switches

JK6 MIDI OUT
JK7 MIDI IN
IC25 Photo Coupler
JK4 SOFT
JK5 SUS

IC27: Gate Array
IOS6 KCLK
IOS5 DTAC
IOS4 CPIOS1
IOS3 CPIOS2
DB0~DB7
IOS1 ALE
IOS7 WR1
IOS0 WR2
CKO
ALE
WR
RD
PD0~PD7
D0~D7
AL0~AL7
PF4~PF7
Address (LSB)
Address (MSB)
ROM (128K bit) IC28
RAM (16K bit) IC29

IC2 Digital Sound Processor
RES
DB0~DB7
ALE
WR1
DO0~DO11
D012~D014
AO~A15, A18
IC1 Wave ROM (1Mbit)
DO~D7
WP0~7, RP0~7

IC33 Digital Sound Processor
WR2
IC42 IC43-1 D/A Converter
IC44, Z6 IC43-2 Lever Shifter
IC32 Wave ROM (1Mbit)

IC3 IC4-1 D/A Converter
IC5, Z1 IC4-2 Level Shifter
IC7~14 Analog Buffer Memory (8ch)
IC34~41 Analog Buffer Memory (8ch)
IC15-1 Mixing
IC16-2 Mixing

IC15-2 Low-Pass Filter
IC16-1 Notch Filter
IC17-1
Tone Selector Q2 Q3 Q4 Q5
IC22-1
IC22-2
IC23 Noise Reduction
IC20 BBD
IC21-2 Low-Pass Filter
IC21-1 Phase Inverter
IC19 Clock Generater
IC18-1, 18-2 LFO
CHO

SYSTEM ASSIGNER BLOCK
DIGITAL SOUND PROCESSOR BLOCK
TONE FILTER & MIXING BLOCK

Key Switches

AS AMP & POWER SUPPLY CIRCUIT

Power SW.

AC IN

CN1

CN2

CN3

POWER TRANSFORMER

CN5

RSTI

+5

+15

-15

E

Q1~3

Reset Circuit

IC2, Q4

+5V Power Supply

IC3

+15 Regulator

IC4

-15 Regulator

D1,2,D3~6

Rectifier

Primary Circuit

SW1 SW2

AC1

AC2

CN2

RSTI +5 +15 -15 E

IC30, 31, Q10

PA0~PA7

PB2

LED Driver

LED'S

CPIOS1, CPIOS2

DB0~DB7

Switches

HP HEADPHONES

JK1

Head-phones Jack

HPL

HPR

SPL

SPR

CN6

CN1

Rch Speaker 16cm, 8Ω

Lch Speaker 16cm, 8Ω

IC7~14

Analog Buffer Memory (8ch)

IC15-1

Mixing

IC15-2

Low-Pass Filter

IC16-1

Notch Filter

IC17-1

Tone Selector

Q2

Q3

Q4

Q5

IC22-1

IC22-2

IC23

Noise Reduction

Main Volume

Q6

Noise Limiter

Q7

Noise Limiter

IC24-1

Lch Mixing

IC24-2

Rch Mixing

AMPL

AMPR

LOL

LOR

IC1-2

Power Amplifier

IC1-1

Power Amplifier

CN1

CN4

IC34~41

Analog Buffer Memory (8ch)

IC16-2

Mixing

IC20

BBD

IC21-2

Low-Pass Filter

IC21-1

Phase Inverter

IC19

Clock Generater

IC18-1,18-2

LFO

CHO

CHO

BUSY

IC17-2

JK3

Line Out L

JK2

Line Out R/RtL

JK1

AUX IN

OR BLOCK

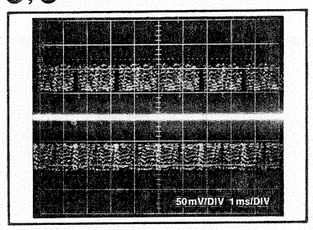
TONE FILTER & MIXING BLOCK

MAIN CIRCUIT BOARD

Measuring conditions of output waveforms

- Tune .....Center position
- Transpose.....“C” position
- Main volume.....“Max” position
- Tone .....Piano I
- Key position .....C_{52}

❶, ❷



- Tone .....Piano I
- Keyboard .....C_{52}

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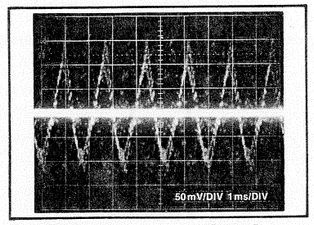

- Tone .....Piano I
- Keyboard .....C_{52}

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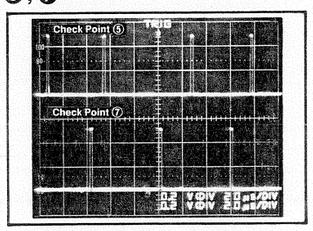

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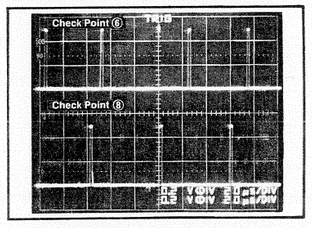

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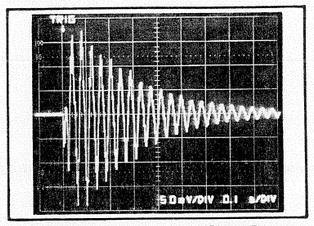
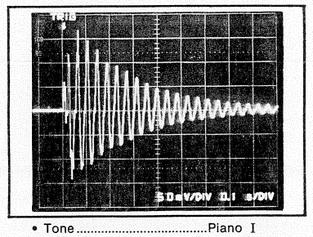


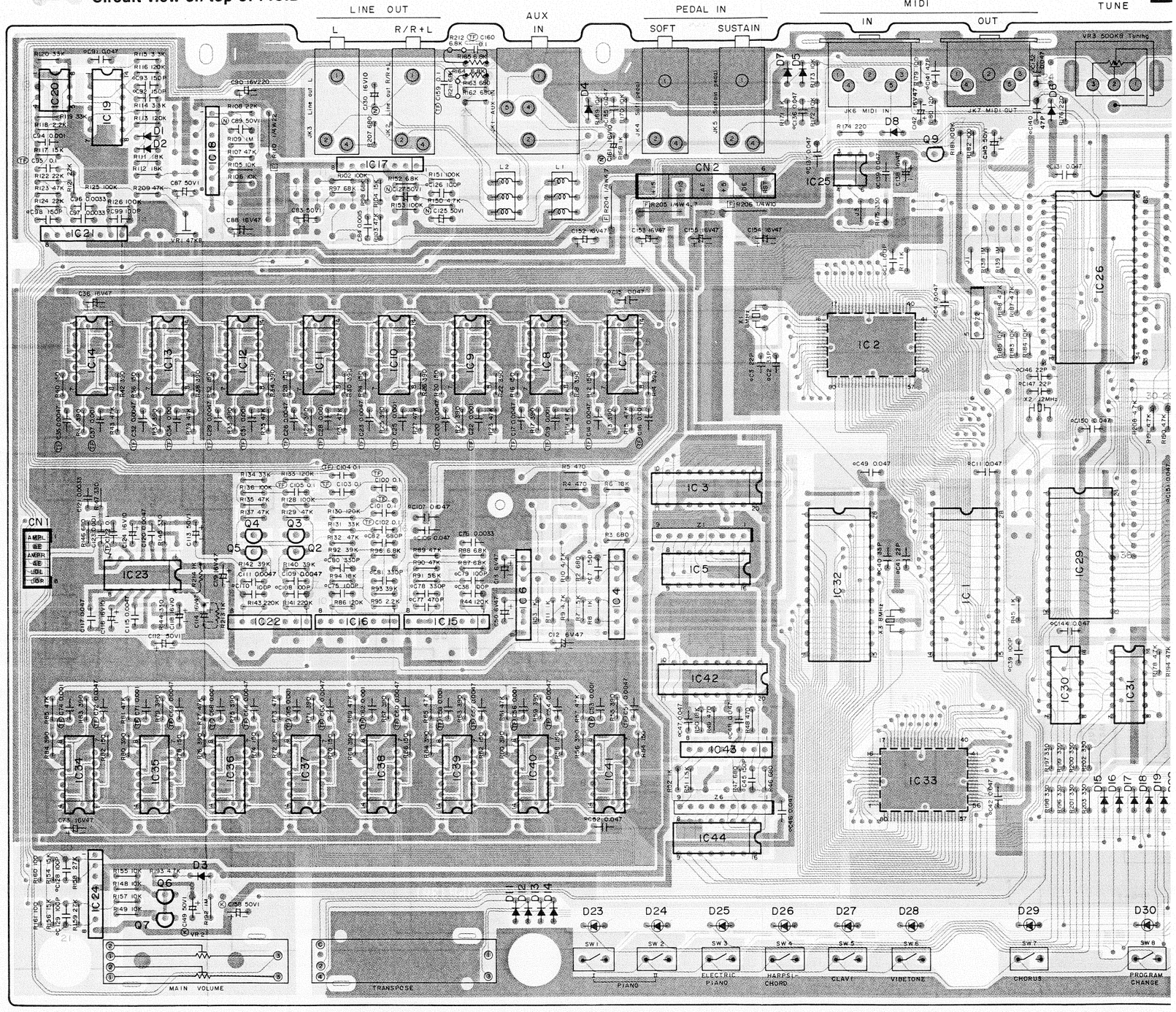
- Tone .....Piano I
- Keyboard .....C_{52}

⓫



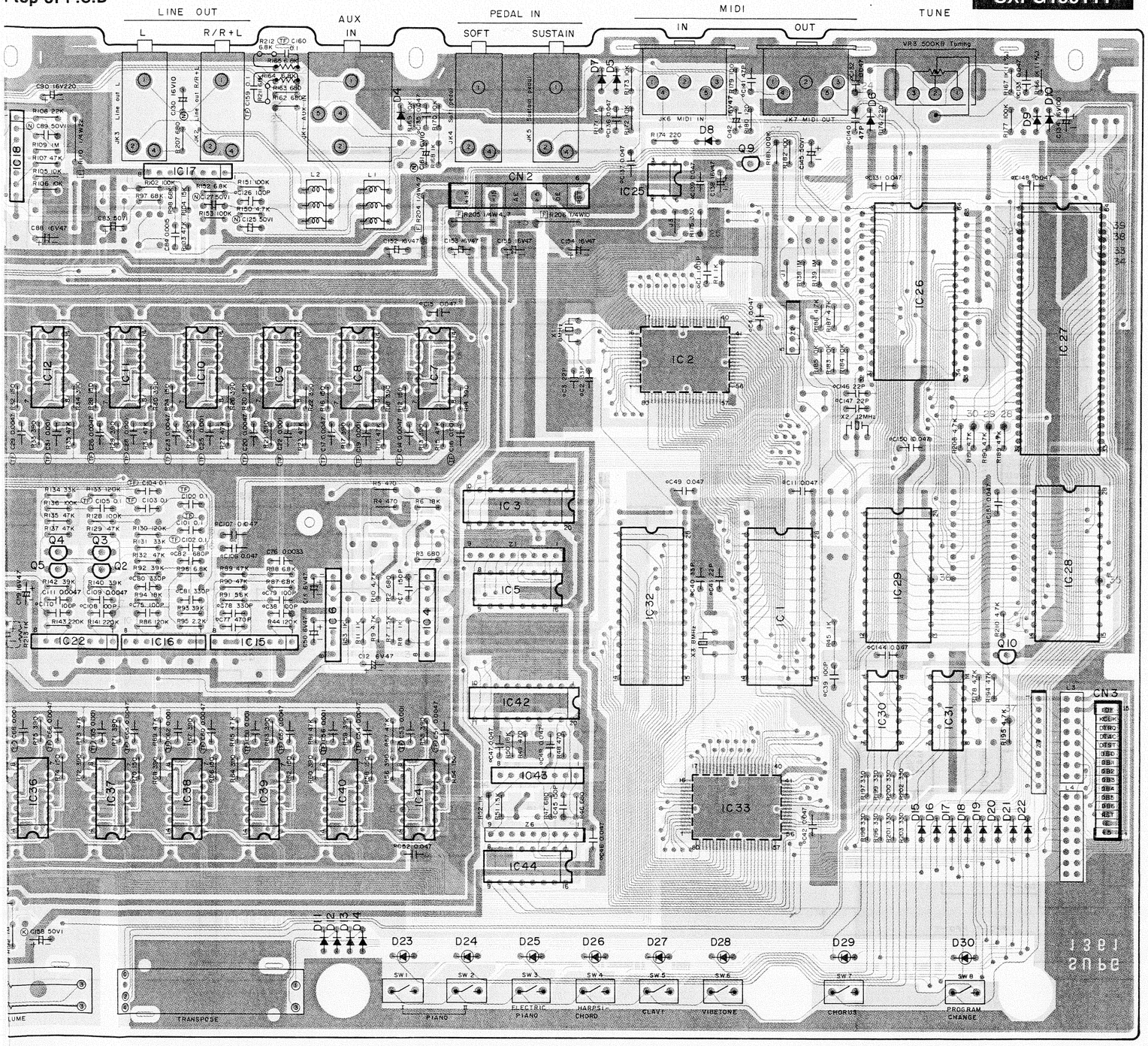
- Tone .....Piano I
- Keyboard .....C_{52}

Circuit view on top of P.C.B



1 top of P.C.B

SXPG136111



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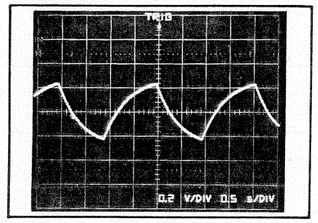

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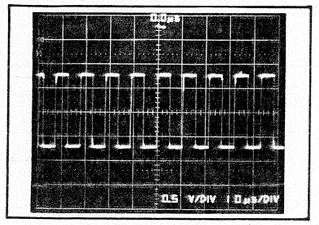
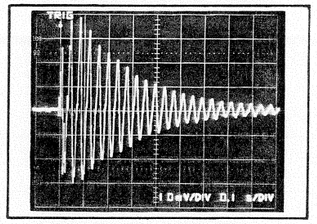
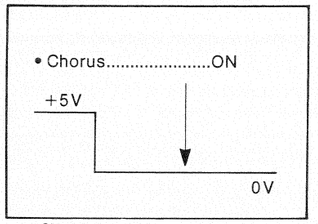


⑭



- Tone .....Piano I
- Chorus .....ON
- Keyboard .....C_{52}

⑮



- Chorus .....ON

NOTES:

- IC'S

IC1, 32:	SVIG1000C152
IC2, 33:	SVIGUPD6312
IC3, 42:	SVIGBA9221
IC4, 43:	SVIGM5238L
IC5, 44:	MN74HC4051
IC6, 15～18, 21, 22, 24:	SVIGM5218L
IC7～14, 34～41:	MN74HC4066
IC19:	SVIGMSM4011
IC20:	MN3009
IC23:	SVIGLM1894N
IC25:	SVIGPC900
IC26:	SVIG7811G077
IC27:	SVIGM603A114
IC28:	SVIG01PX6-A
IC29:	SVIGD446C25
IC30, 31:	SVIGM74LS05

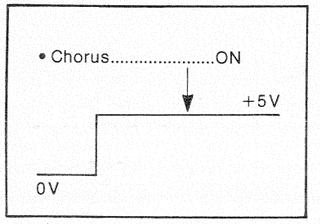
- TRANSISTORS

Q2～7:	2SJ40CD
Q9, 10:	2SA1015-GR

- DIODES

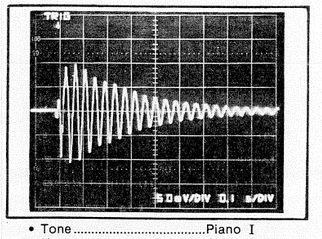
D1～22:	MA165TA5
D23～30:	LN221RPX

⑯



- Chorus .....ON

⑰, ⑱



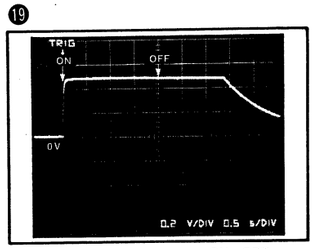
- Tone .....Piano I
- Keyboard .....C_{52}

MAIN CIRCUIT DIAGRAM

1 2 3 4 5 6 7 8 9 10

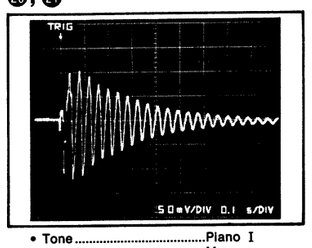
A B C D E F

⑲



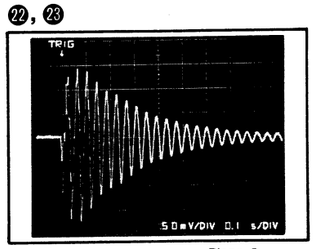
• Key .....ON–OFF

⑳, ㉑



• Tone .....Piano I
• Main Volume.....Max.
• Keyboard .....C_{52}

㉒, ㉓

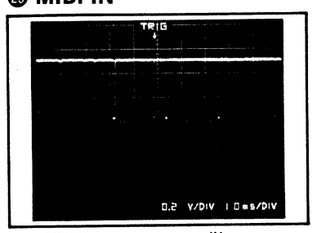


• Tone .....Piano I
• Main Volume.....Max.
• Keyboard .....C_{52}

㉔ TUNE

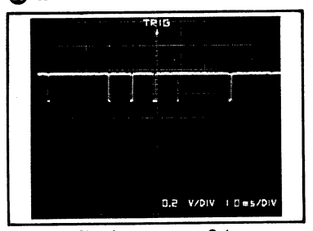
• Tune
♭.....0V
Center.....+2.5V
♯.....+5V

㉕ MIDI IN



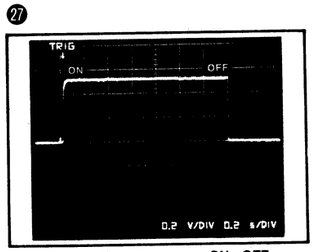
• MIDI Signal .....IN

㉖ MIDI OUT



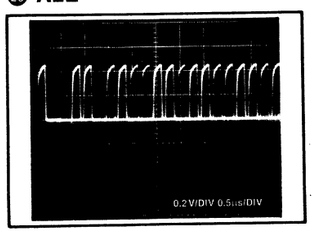
• MIDI Signal .....Out

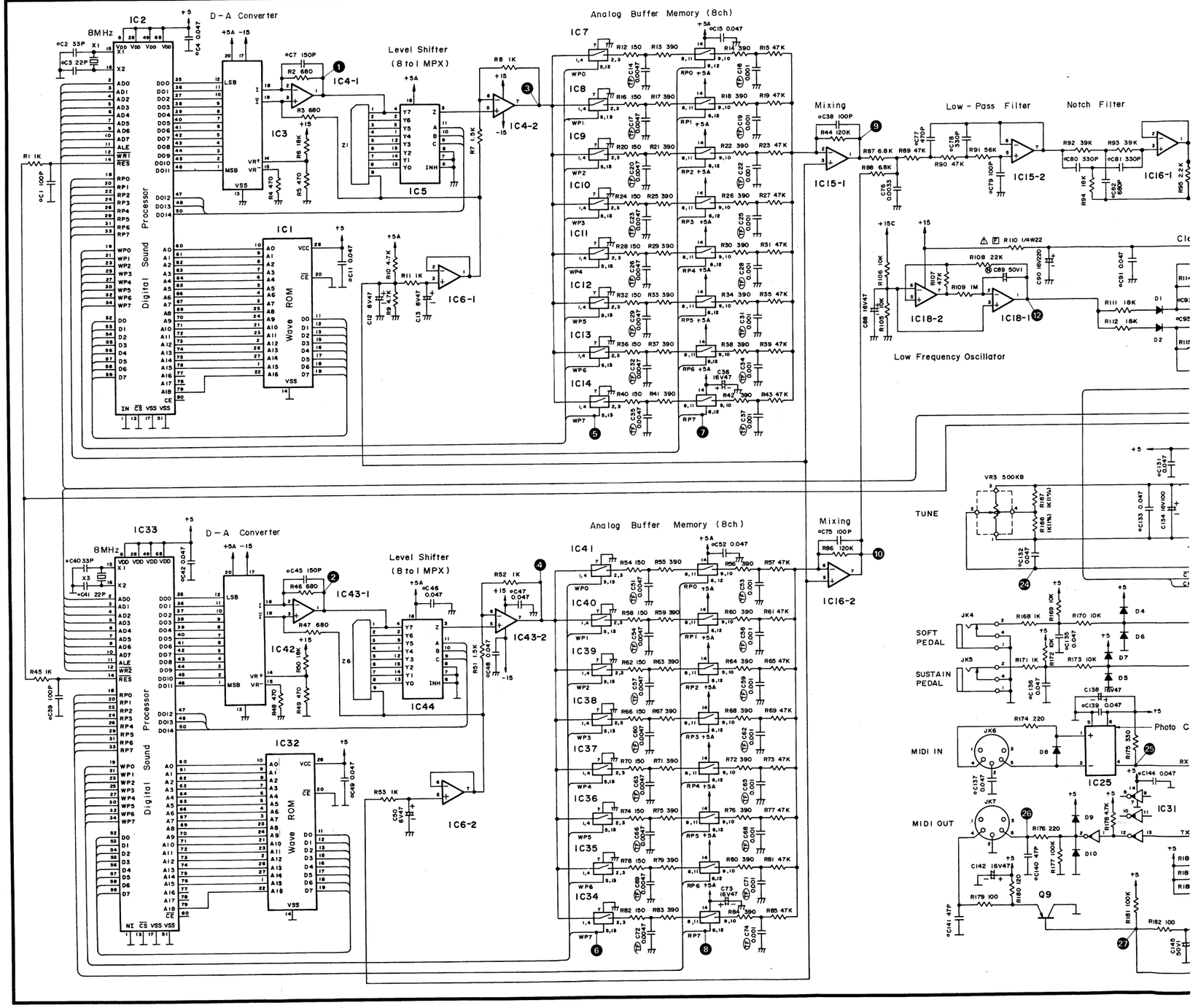
㉗

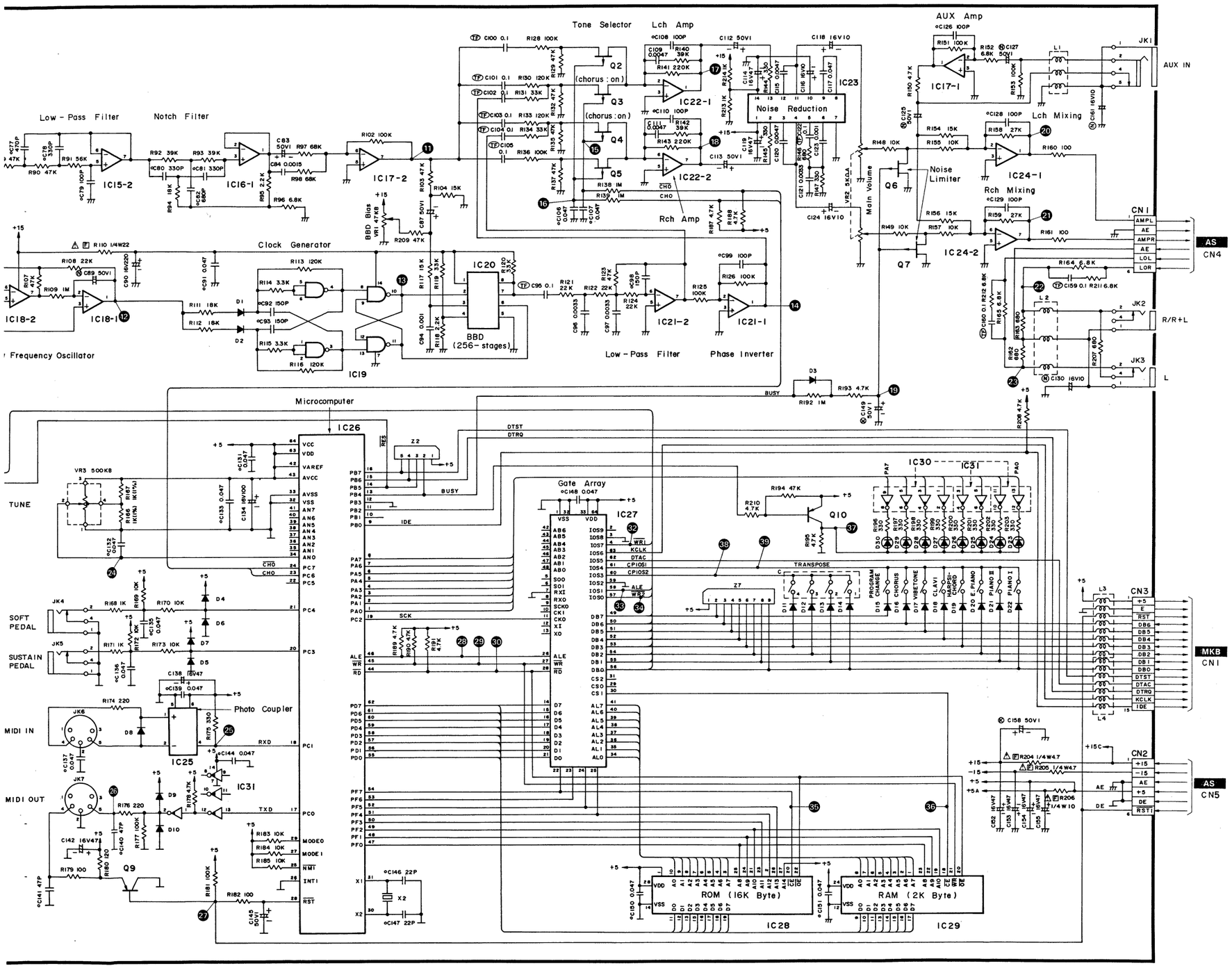


• Power SW.....ON–OFF

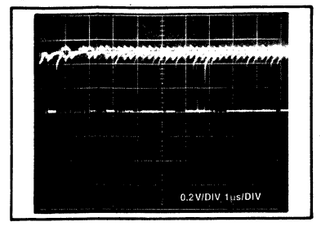
㉘ ALE



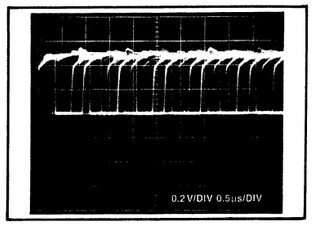




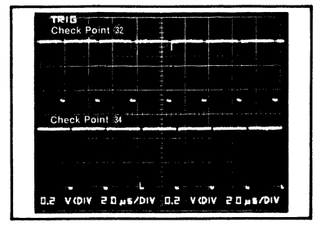
29 $\overline{WR}$



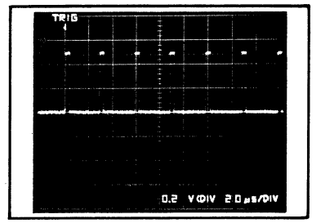
30 $\overline{RD}$



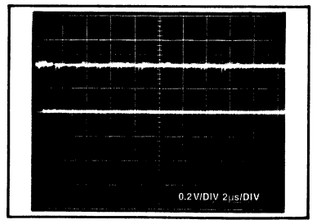
32 $\overline{WR1}$, 34 $\overline{WR2}$



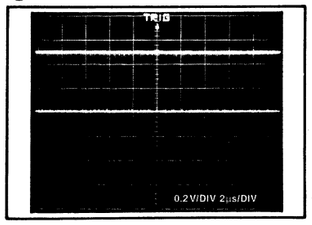
33 ALE



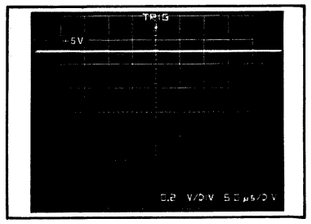
35



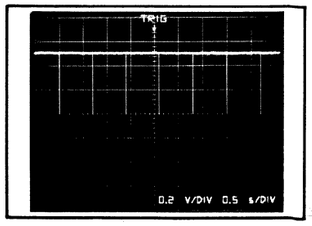
36



37



38, 39



NOTES:

- IC'S

IC1, 32:	SVIG1000C152
IC2, 33:	SVIGUPD6312
IC3, 42:	SVIGBA9221
IC4, 43:	SVIGM5238L
IC5, 44:	MN74HC4051
IC6, 15~18, 21, 22, 24:	SVIGM5218L
IC7~14, 34~41:	MN74HC4066
IC19:	SVIGMSM4011
IC20:	MN3009
IC23:	SVIGLM1894N
IC25:	SVIGPC900
IC26:	SVIG7811G077
IC27:	SVIGM603A114
IC28:	SVIG01PX6-A
IC29:	SVIGD446C25
IC30, 31:	SVIGM74LS05

- TRANSISTORS

Q2~7:	2SJ40CD
Q9, 10:	2SA1015-GR

- DIODES

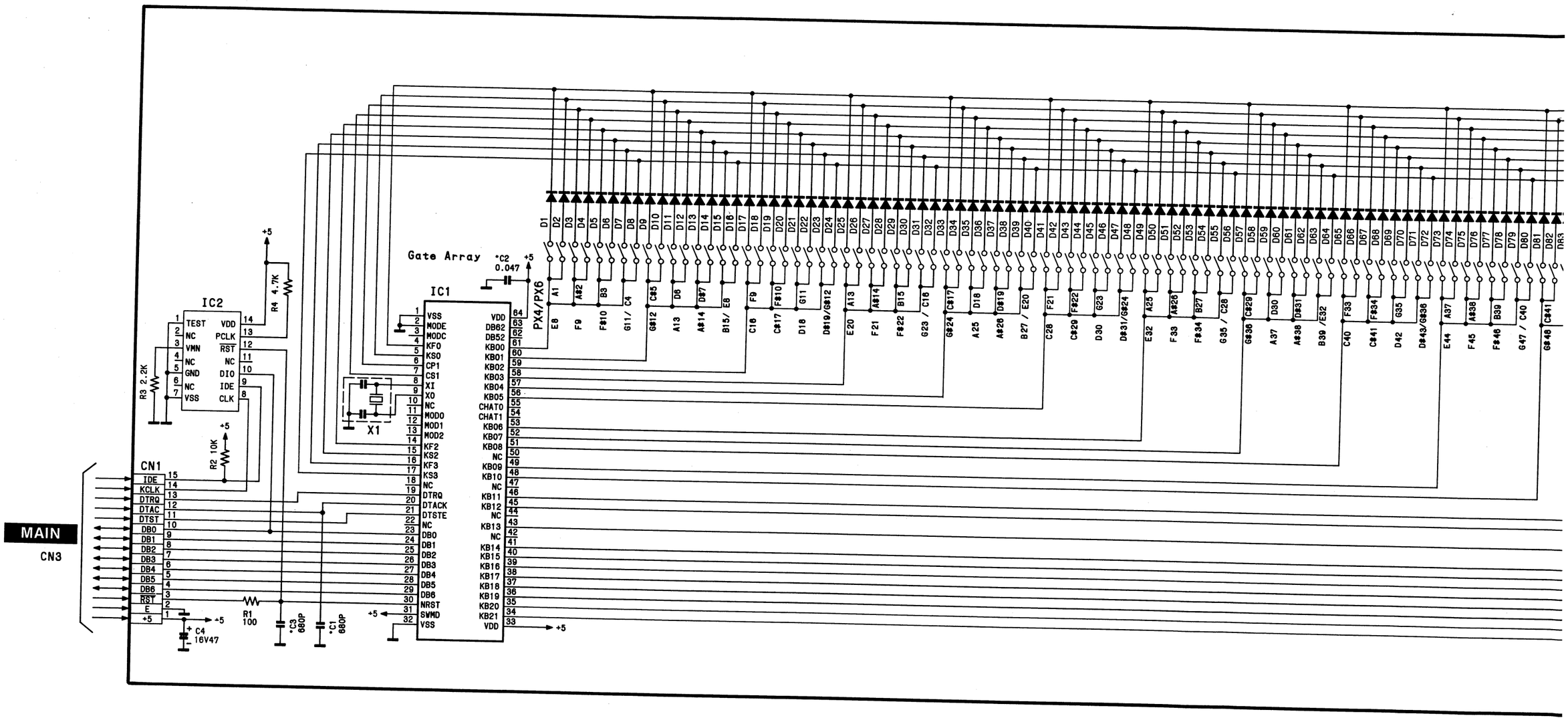
D1~22:	MA165TA5
D23~30:	LN221RPX

MANUAL KEYBOARD 1, 2 CIRCUIT DIAGRAM

■ Tone name indications of keys

PX4 and PX6 are mentioned together for the tone name indications in the circuit diagram.
Refer to the tone name suited for the type of model.

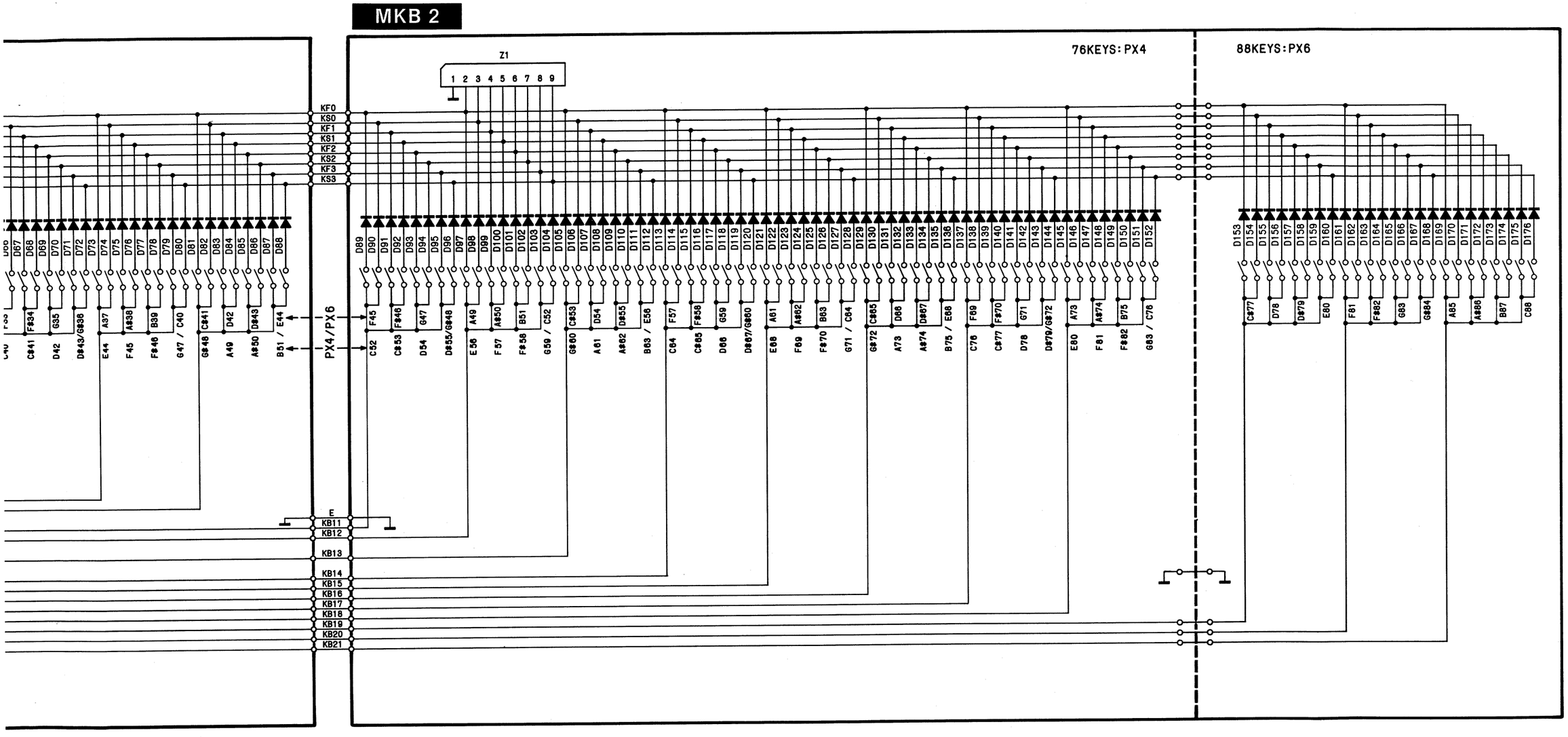
MKB 1



NOTES:

- IC'S
  - IC1: MN50020PGV
  - IC2: MN1231 (not supplied)
- DIODES
  - D1~176: MA162A

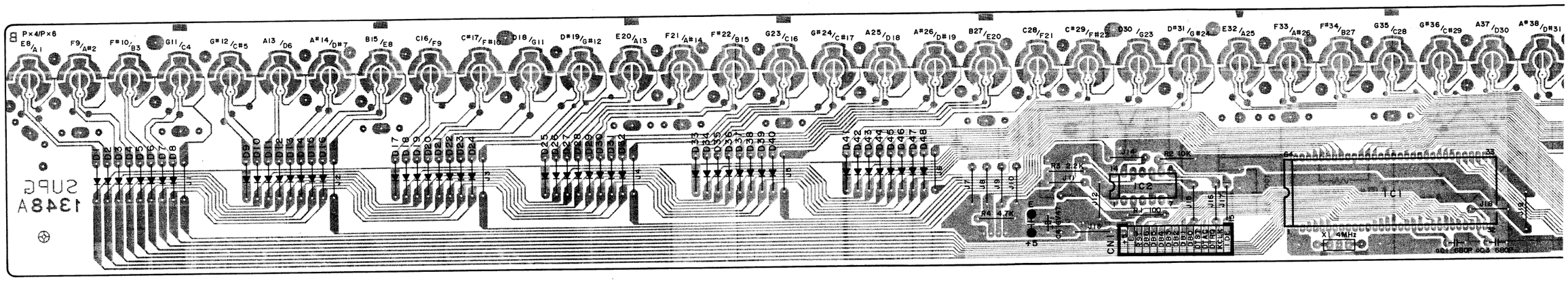
MKB 2


76KEYS: PX4
88KEYS: PX6
Z1
1 2 3 4 5 6 7 8 9
KF0
KS0
KF1
KS1
KF2
KS2
KF3
KS3
E
KB11
KB12
KB13
KB14
KB15
KB16
KB17
KB18
KB19
KB20
KB21
PX4/PX6

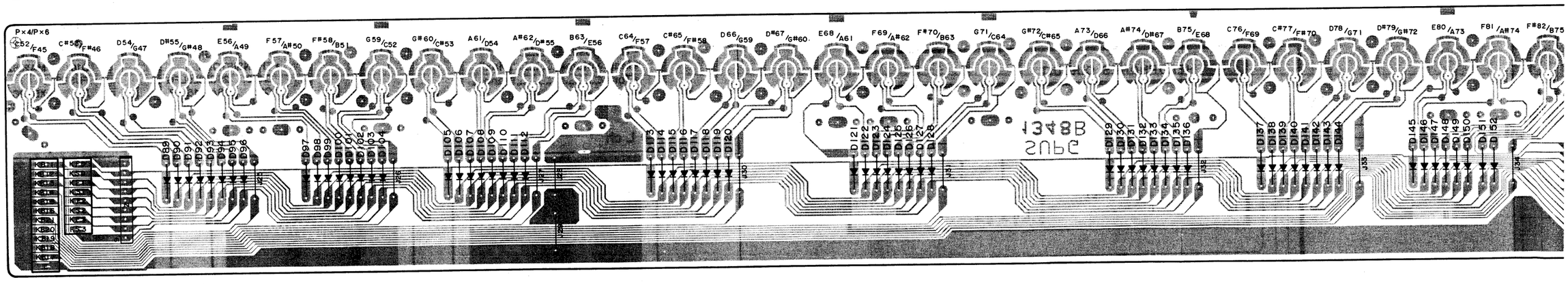
■ Tone name indications of keys

PX4 and PX6 are mentioned together for the tone name indications in the circuit board.
Refer to the tone name suited for the type of model.

MKB 1 MANUAL KEYBOARD 1 CIRCUIT BOARD

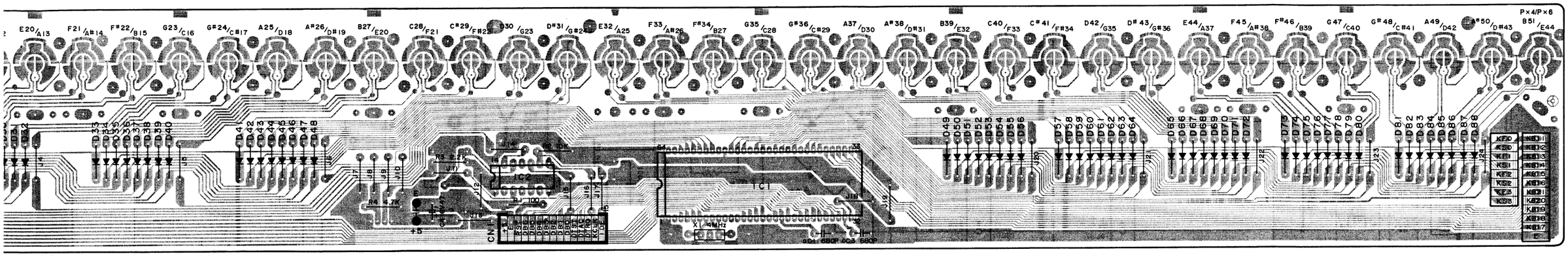


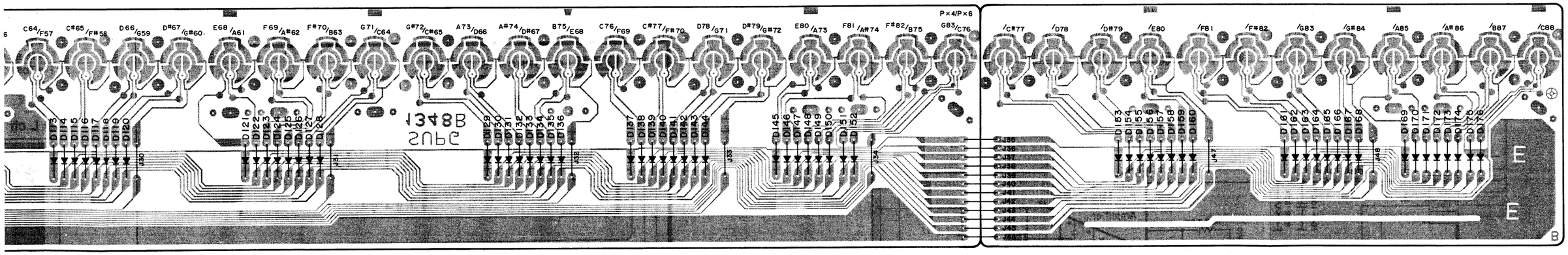
MKB 2 MANUAL KEYBOARD 2 CIRCUIT BOARD



NOTES:

- IC'S
  - IC1: MN50020PGV
  - IC2: MN1231 (not supplied)
- DIODES
  - D1~176: MA162A

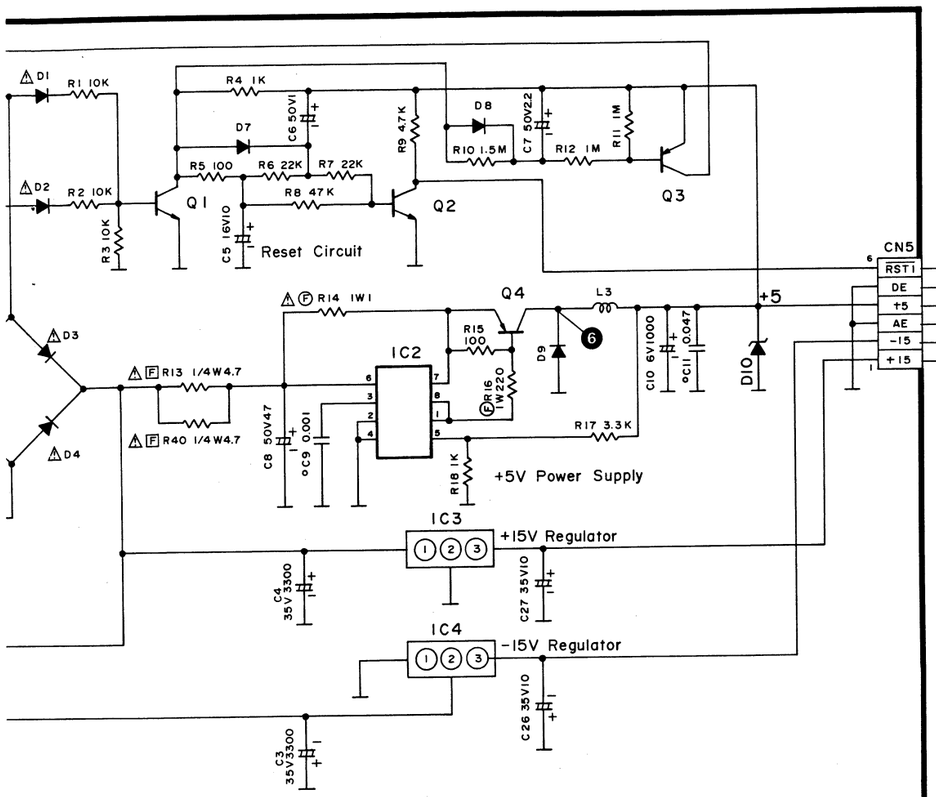


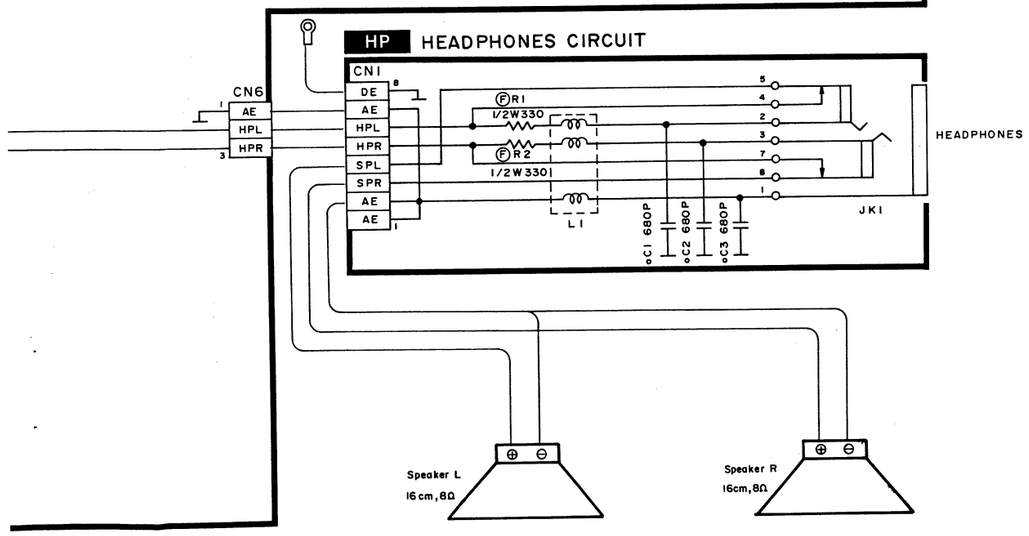


MKB1, MKB2: SXPG134811

NOTES:

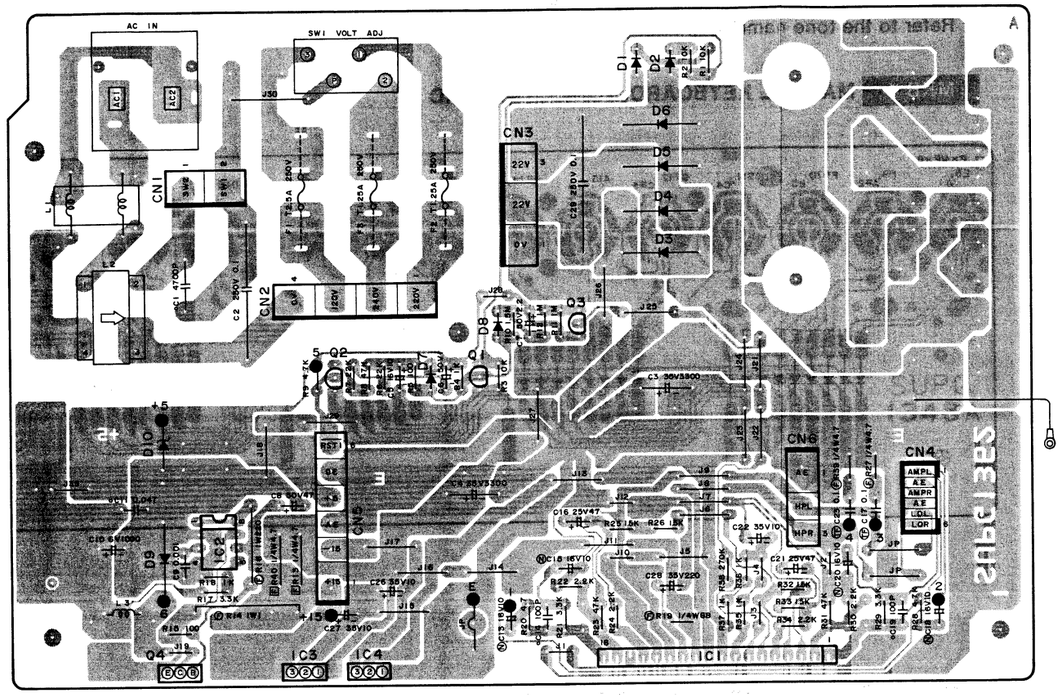
- IC'S
  - IC1: MN50020PGV
  - IC2: MN1231 (not supplied)
- DIODES
  - D1~176: MA162A





• Products for (XL) and (XR) **SXPG136261**

• Other areas **SXPG136251**



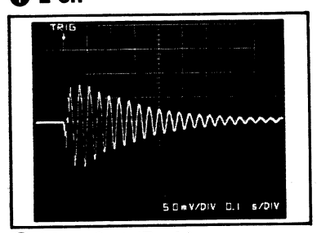
■ Measuring Conditions

- Tune .....Center
- Transpose.....“C”
- Main volume.....“Max”
- Tone .....Piano I
- Key position .....C_{52}

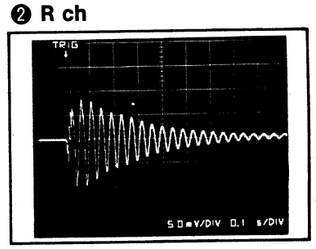
NOTES:

- IC'S
  - IC1: SVIGS4132M2M
  - IC2: SVIGM5291P
  - IC3: SVIGM5F7815
  - IC4: SVIGM5F7915
- TRANSISTORS
  - Q1, 2: 2SC2320LFG
  - Q3: 2SA1015-GR
  - Q4: 2SB953AQP
- DIODES
  - D1, 2: SVDGERA1502Y
  - D3~6: SVDS3V20
  - D7, 8: MA165TA5
  - D9: SVDGRK14
  - D10: MA2062LF
- FUSES
  - F1: XBA2C25TB0
  - F2, 3: XBA2C12TB0

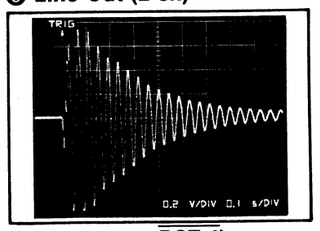
❶ L ch



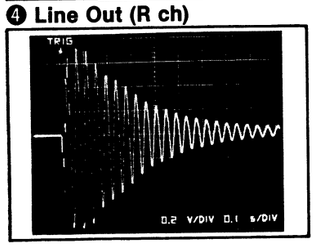
❷ R ch



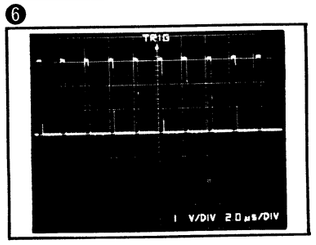
❸ Line Out (L ch)



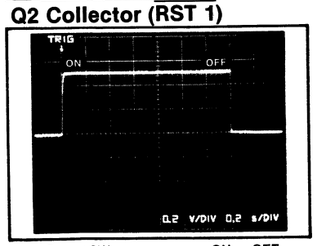
❹ Line Out (R ch)



❻



Q2 Collector (RST 1)



• Power SW.....ON — OFF

AMP & POWER SUPPLY, HEADPHONES CIRCUIT DIAGRAM

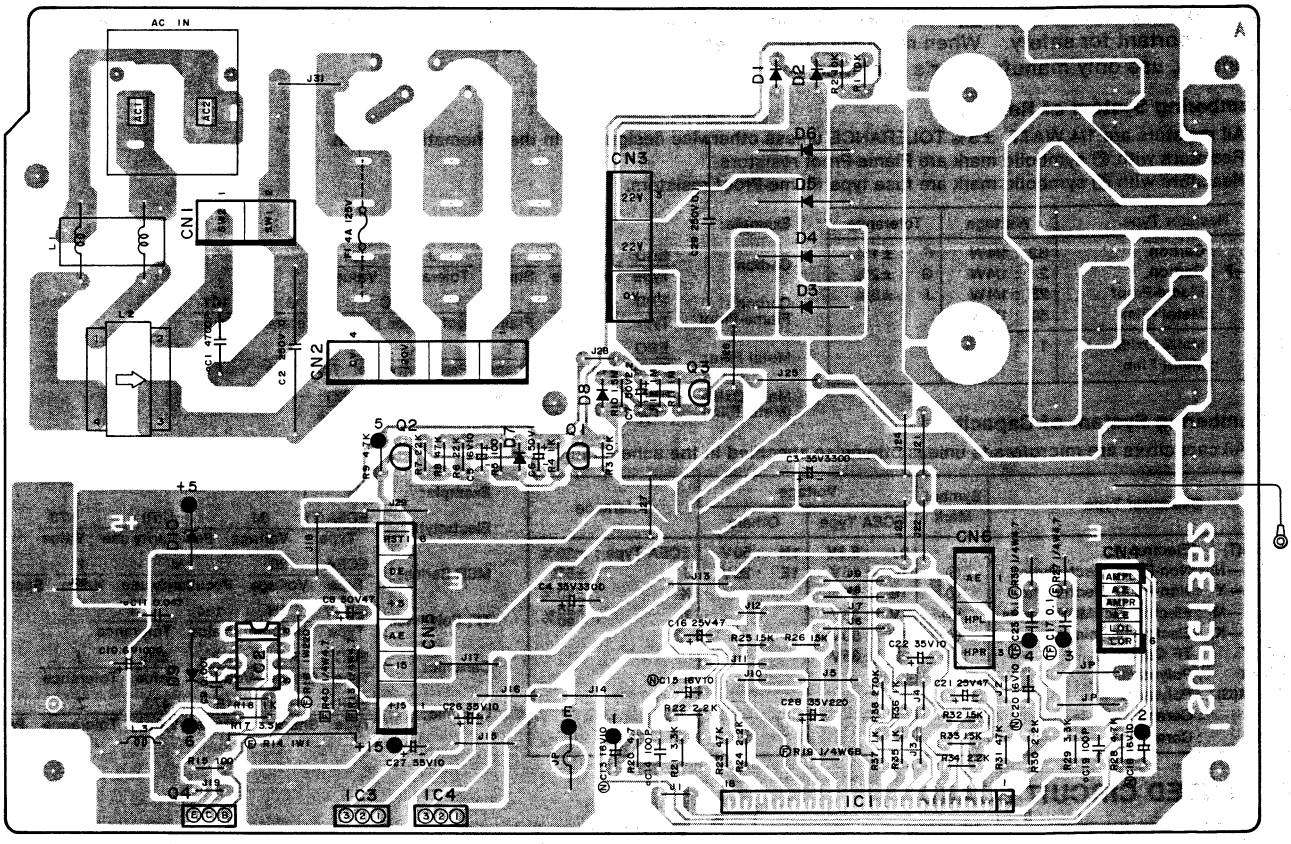
AS AMP & POWER SUPPLY CIRCUIT

Power SW.
Power Transformer
AC Cord
SW1
F2 T1.25A 250V
F3 T1.25A 250V
F1 T2.5A 250V
220V (BRN)
240V (RED)
120V (ORG)
0V (BLU)
22V (BLU)
22V (BLU)
(BLK)
CN1
CN2
CN3
AC IN
AC1
AC2
L1
L2
C1 4700P
C2 250V0.1
C29 250V0.1
* PRODUCTS FOR [M][MC]
F1 4A 125V
Primary Circuit
Rectifier
D1
D2
D3
D4
D5
D6
R1 10K
R2 10K
R3 10K
R4 1K
R5 100
R6 22K
R7 22K
R8 47K
R9 4.7K
R10 1.5M
R11 1M
R12 1M
D7
D8
C5 16V10
C6 50V1
C7 50V22
Q1
Q2
Q3
Reset Circuit
MAIN CN2
CN5
RSTI
DE
+5
AE
-15
+15
R13 1/4W4.7
R40 1/4W4.7
R14 1W1
R15 100
R16 1W220
R17 3.3K
R18 1K
Q4
L3
D9
D10
IC2
C8 50V47
C9 0.001
C10 6V1000
C11 0.0047
+5V Power Supply
IC3
+15V Regulator
C4 35V3300
C27 35V10
IC4
-15V Regulator
C3 35V3300
C26 35V10
C28 35V220
R19 1/4W 68
IC1-2
IC1-1
Power Amplifier
C13 16V10
R20 4.7K
C14 100P
R21 3.3K
R22 2.2K
C15 16V10
R23 47K
C16 25V47
R25 1.5K
R26 1.5K
R24 2.2K
C17 0.1
R27 4.7
C22 35V10
R36 1K
R37 1K
R35 1K
R38 270K
C18 16V10
R28 4.7K
C19 100P
R29 3.3K
R30 2.2K
C20 16V10
R31 47K
C21 25V47
R33 1.5K
R32 1.5K
R34 2.2K
C23 0.1
R39 4.7
R27 4.7
CN4
AMPL
AE
AMPR
AE
LOL
LOR
CN1 MAIN
CN6
AE
HPL
HPR
HP HEADPHONES CIRCUIT
SPL
SPR
R1 1/2W330
R2 1/2W330
L1
C1 680P
C2 680P
C3 680P
JK1
HEADPHONES
Speaker L 16cm,8Ω
Speaker R 16cm,8Ω

AS AMP & POWER SUPPLY CIRCUIT BOARD

• Products for (M) and (MC)

SXPG136271

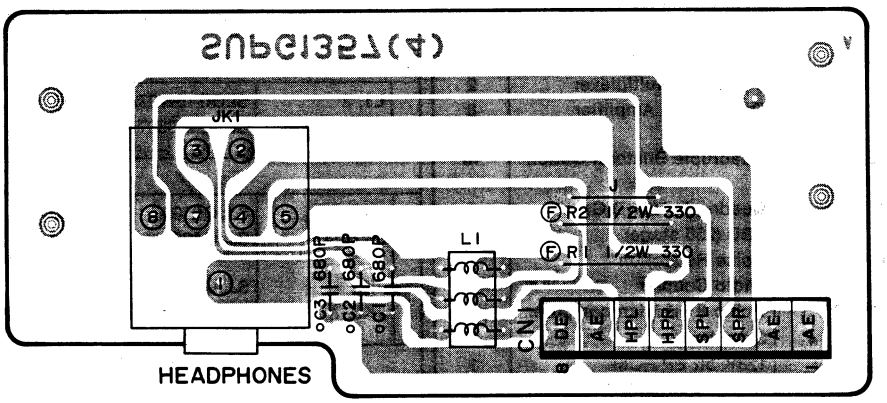


NOTES:

- IC'S
  - IC1: SVIGS4132M2M
  - IC2: SVIGM5291P
  - IC3: SVIGM5F7815
  - IC4: SVIGM5F7915
- TRANSISTORS
  - Q1, 2: 2SC2320LFG
  - Q3: 2SA1015-GR
  - Q4: 2SB953AQP
- DIODES
  - D1, 2: SVDGERA1502Y
  - D3~6: SVDS3V20
  - D7, 8: MA165TA5
  - D9: SVDGRK14
  - D10: MA2062LF
- FUSE
  - F1: XBA1C40NU100

HP HEADPHONES CIRCUIT BOARD

SXPG135711



REPLACEMENT PARTS LIST..... Electrical Parts

Notes:

1. Printed circuit boards are supplied only during the period of production.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■ Numbering System of Resistor

- All resistors are 1/4 WATT, ±5% TOLERANCE unless otherwise designated in the schematic diagram.
- Resistors with Ⓕ symbolic mark are Flame-Proof resistors.
- Resistors with [F] symbolic mark are fuse type Flame-Proof resistors.

Resistor Type	Wattage	Tolerance
ERD : Carbon ERD—F : Carbon, Flame-Proof ERO : Metal Film	S2 : 1/4W 2 : 1/4W 25 : 1/4W 50 : 1/2W	F : ±1% G : ±2% J : ±5%
ERG : Metal Oxide ERX : Metal Film	1 : 1W	

Example:

Carbon:	ERD (Type)	S2 (Wattage)	T (Shape)	J (Tolerance)	101 (Value)	
Carbon Flame-Proof:	ERD (Type)	2 (Wattage)	F (Flame-Proof)	C (Fuse Type)	G (Tolerance)	101 (Value)
Metal Film:	ERO (Type)	S2 (Wattage)	T (Shape)	K (Peculiarity use)	F (Tolerance)	1001 (Value)
Metal Oxide (Metal Film):	ERG(X) (Type)	1 (Wattage)	AN (Shape)	J (Tolerance)	221 (Value)	

■ Numbering System of Capacitor

- All capacitors are microfarads unless otherwise specified in the schematic diagram.

Capacitor Type	Symbol Mark	Voltage		Tolerance
		ECEA Type	Others	
ECEA(T) : Electrolytic		0J : 6.3V	1H : 50V	ECEA Type : ±20%
ECEA—N : Non-Polar Electrolytic	Ⓝ	1C : 16V	1E : 25V	J : ±5%
ECEA—Y : Non-Polar Electrolytic	Ⓨ	1E : 25V		K : ±10%
ECEA—M : Electrolytic, MSR Series	Ⓜ	1V : 35V		Z : +80 −20 %
ECEA—K : Electrolytic, miniature type	Ⓚ	1H : 50V		
ECQV : TF Capacitor	Ⓣ	35 : 35V		
ECQB : Polyester	Ⓣ			
ECQM(G) : Polyester				
ECC : Ceramic	○			
ECK : Ceramic	○			

Example:

Electrolytic:	ECEA(T) (Type)	0J (Voltage)	U(R) (Peculiarity use)	470 (Value)		
MSR Series:	ECEA (Type)	50 (Voltage)	M (Peculiarity use)	1 (Value)	R (Special use)	
TF, Polyester:	ECQV (Type)	1H (Voltage)	104 (Value)	J (Tolerance)		
Ceramic:	ECC (Type)	R (Shape)	1H (Voltage)	220 (Value)	J (Tolerance)	
Ceramic:	ECK (Type)	R (Shape)	1E (Voltage)	473 (Value)	Z (Tolerance)	V (Peculiarity use)

■ PRINTED CIRCUIT BOARD

	Ref. No.	Part No.	Description	Per/Set
○		SXPG136111	Main	1
		SXPG134811	Manual Keyboard	1
○		SXPG136251	Amp & Power Supply	1
○	XL XR	SXPG136261	Amp & Power Supply, [XL][XR] only	1
○	M MC	SXPG136271	Amp & Power Supply, [M][MC] only	1
		SXPG135711	Headphones	1

MAIN MAIN CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUITS		
○	IC1, 32	SVIG1000C152	1M bit MASK ROM	2
	IC2, 33	SVIGUPD6312	Digital Sound Processor	2
	IC3, 42	SVIGBA9221	12 bit D-A Converter	2
	IC4, 43	SVIGM5238L	Operational Amplifier	2
	IC5, 44	MN74HC4051	8 channel Multiplexer	2
	IC6, 15~18, 21, 22, 24	SVIGM5218L	Operational Amplifier	8
	IC7~14, 34~41	MN74HC4066	Quadruple Bilateral Switch	16
	IC19	SVIGMSM4011	Quadruple NAND Gate	1
	IC20	MN3009	BBD (256 stage)	1
	IC23	SVIGLM1894N	Noise Reduction	1
	IC25	SVIGPC900	Photo Coupler	1
	IC26	SVIG7811G077	1 chip 8 bit Microcomputer	1
	IC27	SVIGM603A114	Gate Array	1
○	IC28	SVIG01PX6-A	128K bit EP ROM	1
	IC29	SVIGD446C25	16K bit Static RAM	1
	IC30, 31	SVIGM74LS05	Hex Inverter O.C.	2

	Ref. No.	Part No.	Description	Per/Set
		TRANSISTORS		
	Q2~7	2SJ40CD	FET	6
S	Q9, 10	2SA1015-GR	2SA933STRS	2
		DIODES		
	D1~22	MA165TA5		22
	D23~30	LN221RPX	LED (red)	8
		QUARTZ OSCILLATORS		
	X1, 3	SVQG43U8000T	8MHz	2
	X2	SVQG43U1200A	12MHz	1
		COMPONENT COMBINATIONS		
	Z1, 6	EXKS14Z2073	1K/2KΩ, Ladder Network	2
	Z2	EXBP84472MM	4.7KΩ×4	1
	Z7	EXBP88472MM	4.7KΩ×8	1
		COILS		
	L1, 2	SLQG15W33AP	15μH	2
	L3, 4	SLCG163307B8		2
		JACKS		
	JK1	SJJG210A	AUX IN	1
	JK2~4	SJJG400A	Line Out (R/R+L, L), Soft Pedal	3
	JK5	SJJG400B	Sustain Pedal	1
	JK6, 7	SJSG1370A	MIDI (in, out)	2
		SEMI-FIXED RESISTOR		
	VR1	EVSG0E1B473A	47KΩ B	1

Ref. No.	Part No.	Description	Per/Set
VARIABLE RESISTORS			
○ VR2	EWD06610A53G	5KΩ A Main Volume	1
VR3	EVA06215B55G	500KΩ B Tune	1
SWITCHES			
○ SW1~8	SSHG1046A	Push Switch	8
	SSSG1011A	Transpose	1
RESISTORS			
R1	ERDS2TJ102	1KΩ	1
R2, 3	ERDS2TJ681	680Ω	2
R4, 5	ERDS2TJ471	470Ω	2
R6	ERDS2TJ183	18KΩ	1
R7	ERDS2TJ152	1.5KΩ	1
R8	ERDS2TJ102	1KΩ	1
R9, 10	ERDS2TJ472	4.7KΩ	2
R11	ERDS2TJ102	1KΩ	1
R12	ERDS2TJ151	150Ω	1
R13, 14	ERDS2TJ391	390Ω	2
R15	ERDS2TJ473	47KΩ	1
R16	ERDS2TJ151	150Ω	1
R17, 18	ERDS2TJ391	390Ω	2
R19	ERDS2TJ473	47KΩ	1
R20	ERDS2TJ151	150Ω	1
R21, 22	ERDS2TJ391	390Ω	2
R23	ERDS2TJ473	47KΩ	1
R24	ERDS2TJ151	150Ω	1
R25, 26	ERDS2TJ391	390Ω	2
R27	ERDS2TJ473	47KΩ	1
R28	ERDS2TJ151	150Ω	1
R29, 30	ERDS2TJ391	390Ω	2
R31	ERDS2TJ473	47KΩ	1
R32	ERDS2TJ151	150Ω	1
R33, 34	ERDS2TJ391	390Ω	2
R35	ERDS2TJ473	47KΩ	1
R36	ERDS2TJ151	150Ω	1
R37, 38	ERDS2TJ391	390Ω	2
R39	ERDS2TJ473	47KΩ	1
R40	ERDS2TJ151	150Ω	1
R41, 42	ERDS2TJ391	390Ω	2
R43	ERDS2TJ473	47KΩ	1
R44	ERDS2TJ124	120KΩ	1
R45	ERDS2TJ102	1KΩ	1
R46, 47	ERDS2TJ681	680Ω	2
R48, 49	ERDS2TJ471	470Ω	2
R50	ERDS2TJ183	18KΩ	1
R51	ERDS2TJ152	1.5KΩ	1
R52	ERDS2TJ102	1KΩ	1
R53	ERDS2TJ102	1KΩ	1
R54	ERDS2TJ151	150Ω	1
R55, 56	ERDS2TJ391	390Ω	2
R57	ERDS2TJ473	47KΩ	1
R58	ERDS2TJ151	150Ω	1
R59, 60	ERDS2TJ391	390Ω	2
R61	ERDS2TJ473	47KΩ	1
R62	ERDS2TJ151	150Ω	1
R63, 64	ERDS2TJ391	390Ω	2
R65	ERDS2TJ473	47KΩ	1
R66	ERDS2TJ151	150Ω	1
R67, 68	ERDS2TJ391	390Ω	2
R69	ERDS2TJ473	47KΩ	1
R70	ERDS2TJ151	150Ω	1
R71, 72	ERDS2TJ391	390Ω	2
R73	ERDS2TJ473	47KΩ	1
R74	ERDS2TJ151	150Ω	1
R75, 76	ERDS2TJ391	390Ω	2

Ref. No.	Part No.	Description	Per/Set
R77	ERDS2TJ473	47KΩ	1
R78	ERDS2TJ151	150Ω	1
R79, 80	ERDS2TJ391	390Ω	2
R81	ERDS2TJ473	47KΩ	1
R82	ERDS2TJ151	150Ω	1
R83, 84	ERDS2TJ391	390Ω	2
R85	ERDS2TJ473	47KΩ	1
R86	ERDS2TJ124	120KΩ	1
R87, 88	ERDS2TJ682	6.8KΩ	2
R89, 90	ERDS2TJ473	47KΩ	2
R91	ERDS2TJ563	56KΩ	1
R92, 93	ERDS2TJ393	39KΩ	2
R94	ERDS2TJ183	18KΩ	1
R95	ERDS2TJ222	2.2KΩ	1
R96	ERDS2TJ682	6.8KΩ	1
R97, 98	ERDS2TJ683	68KΩ	2
R102	ERDS2TJ104	100KΩ	1
R103	ERDS2TJ473	47KΩ	1
R104	ERDS2TJ153	15KΩ	1
R105, 106	ERDS2TJ103	10KΩ	2
R107	ERDS2TJ473	47KΩ	1
R108	ERDS2TJ223	22KΩ	1
R109	ERDS2TJ105	1MΩ	1
[F] R110 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R111, 112	ERDS2TJ183	18KΩ	2
R113	ERDS2TJ124	120KΩ	1
R114, 115	ERDS2TJ332	3.3KΩ	2
R116	ERDS2TJ124	120KΩ	1
R117	ERDS2TJ153	15KΩ	1
R118	ERDS2TJ222	2.2KΩ	1
R119, 120	ERDS2TJ333	33KΩ	2
R121, 122	ERDS2TJ223	22KΩ	2
R123	ERDS2TJ473	47KΩ	1
R124	ERDS2TJ223	22KΩ	1
R125, 126	ERDS2TJ104	100KΩ	2
R128	ERDS2TJ104	100KΩ	1
R129	ERDS2TJ473	47KΩ	1
R130	ERDS2TJ124	120KΩ	1
R131	ERDS2TJ333	33KΩ	1
R132	ERDS2TJ473	47KΩ	1
R133	ERDS2TJ124	120KΩ	1
R134	ERDS2TJ333	33KΩ	1
R135	ERDS2TJ473	47KΩ	1
R136	ERDS2TJ104	100KΩ	1
R137	ERDS2TJ473	47KΩ	1
R138, 139	ERDS2TJ105	1MΩ	2
R140	ERDS2TJ393	39KΩ	1
R141	ERDS2TJ224	220KΩ	1
R142	ERDS2TJ393	39KΩ	1
R143	ERDS2TJ224	220KΩ	1
R144, 145	ERDS2TJ331	330Ω	2
R146	ERDS2TJ681	680Ω	1
R147	ERDS2TJ331	330Ω	1
R148, 149	ERDS2TJ103	10KΩ	2
R150	ERDS2TJ472	4.7KΩ	1
R151	ERDS2TJ104	100KΩ	1
R152	ERDS2TJ682	6.8KΩ	1
R153	ERDS2TJ104	100KΩ	1
R154	ERDS2TJ153	15KΩ	1
R155	ERDS2TJ103	10KΩ	1
R156	ERDS2TJ153	15KΩ	1
R157	ERDS2TJ103	10KΩ	1
R158, 159	ERDS2TJ273	27KΩ	2
R160, 161	ERDS2TJ101	100Ω	2
R162, 163	ERDS2TJ681	680Ω	2
R164, 165	ERDS2TJ682	6.8KΩ	2
R166, 167	EROS2TKF1001	1KΩ, ±1%	2
R168	ERDS2TJ102	1KΩ	1

Ref. No.	Part No.	Description	Per/Set
R169, 170	ERDS2TJ103	10KΩ	2
R171	ERDS2TJ102	1KΩ	1
R172, 173	ERDS2TJ103	10KΩ	2
R174	ERDS2TJ221	220Ω	1
R175	ERDS2TJ331	330Ω	1
R176	ERDS2TJ221	220Ω	1
R177	ERDS2TJ104	100KΩ	1
R178	ERDS2TJ472	4.7KΩ	1
R179	ERDS2TJ101	100Ω	1
R180	ERDS2TJ121	120Ω	1
R181	ERDS2TJ104	100KΩ	1
R182	ERDS2TJ101	100Ω	1
R183～185	ERDS2TJ103	10KΩ	3
R187～191	ERDS2TJ472	4.7KΩ	5
R192	ERDS2TJ105	1MΩ	1
R193	ERDS2TJ472	4.7KΩ	1
R194	ERDS2TJ473	47KΩ	1
R195	ERDS2TJ472	4.7KΩ	1
R196～203	ERDS2TJ331	330Ω	8
[F] R204, ⚠ 205	ERD2FCJ4R7	4.7Ω, 1/4W Fuse Type	2
[F] R206 ⚠	ERD2FCG100	10Ω, 1/4W Fuse Type	1
R207	ERDS2TJ681	680Ω	1
R208	ERDS2TJ472	4.7KΩ	1
R209	ERDS2TJ473	47KΩ	1
R210	ERDS2TJ472	4.7KΩ	1
R211, 212	ERDS2TJ682	6.8KΩ	2
R213, 214	ERDS2TJ102	1KΩ	2
CAPACITORS			
○ C1	ECCR1H101J	100PF	1
○ C2	ECCR1H330J	33PF	1
○ C3	ECCR1H220J	22PF	1
○ C4	ECKR1E473ZV	0.047μF	1
○ C7	ECCR1H151J	150PF	1
○ C11	ECKR1E473ZV	0.047μF	1
C12, 13	ECEA0JU470	47μF, 6.3V	2
(TF) C14	ECQB1H472JZ	0.0047μF	1
○ C15	ECKR1E473ZV	0.047μF	1
(TF) C16	ECQB1H102JZ	0.001μF	1
(TF) C17	ECQB1H472JZ	0.0047μF	1
(TF) C19	ECQB1H102JZ	0.001μF	1
(TF) C20	ECQB1H472JZ	0.0047μF	1
(TF) C22	ECQB1H102JZ	0.001μF	1
(TF) C23	ECQB1H472JZ	0.0047μF	1
(TF) C25	ECQB1H102JZ	0.001μF	1
(TF) C26	ECQB1H472JZ	0.0047μF	1
(TF) C28	ECQB1H102JZ	0.001μF	1
(TF) C29	ECQB1H472JZ	0.0047μF	1
(TF) C31	ECQB1H102JZ	0.001μF	1
(TF) C32	ECQB1H472JZ	0.0047μF	1
(TF) C34	ECQB1H102JZ	0.001μF	1
(TF) C35	ECQB1H472JZ	0.0047μF	1
C36	ECEA1CU470	47μF, 16V	1
(TF) C37	ECQB1H102JZ	0.001μF	1
○ C38, 39	ECCR1H101J	100PF	2
○ C40	ECCR1H330J	33PF	1
○ C41	ECCR1H220J	22PF	1
○ C42	ECKR1E473ZV	0.047μF	1
○ C45	ECCR1H151J	150PF	1
○ C46～49	ECKR1E473ZV	0.047μF	4
C50	ECEA0JU470	47μF, 6.3V	1
(TF) C51	ECQB1H472JZ	0.0047μF	1
○ C52	ECKR1E473ZV	0.047μF	1
(TF) C53	ECQB1H102JZ	0.001μF	1
(TF) C54	ECQB1H472JZ	0.0047μF	1
(TF) C56	ECQB1H102JZ	0.001μF	1

Ref. No.	Part No.	Description	Per/Set
(TF) C57	ECQB1H472JZ	0.0047μF	1
(TF) C59	ECQB1H102JZ	0.001μF	1
(TF) C60	ECQB1H472JZ	0.0047μF	1
(TF) C62	ECQB1H102JZ	0.001μF	1
(TF) C63	ECQB1H472JZ	0.0047μF	1
(TF) C65	ECQB1H102JZ	0.001μF	1
(TF) C66	ECQB1H472JZ	0.0047μF	1
(TF) C68	ECQB1H102JZ	0.001μF	1
(TF) C69	ECQB1H472JZ	0.0047μF	1
(TF) C71	ECQB1H102JZ	0.001μF	1
(TF) C72	ECQB1H472JZ	0.0047μF	1
C73	ECEA1CU470	47μF, 16V	1
(TF) C74	ECQB1H102JZ	0.001μF	1
○ C75	ECCR1H101J	100PF	1
C76	ECQG1H332KZ	0.0033μF	1
○ C77	ECCR1H471J	470PF	1
○ C78	ECCR1H331J	330PF	1
○ C79	ECCR1H101J	100PF	1
○ C80, 81	ECCR1H331J	330PF	2
○ C82	ECCR1H681J	680PF	1
C83	ECEA1HU010	1μF, 50V	1
C84	ECQG1H152KZ	0.0015μF	1
C87	ECEA1HU010	1μF, 50V	1
C88	ECEA1CU470	47μF, 16V	1
(N) C89	ECEA1HN010S	1μF, 50V	1
C90	ECEA1CU221	220μF, 16V	1
○ C91	ECKR1E473ZV	0.047μF	1
○ C92, 93	ECCR1H151J	150PF	2
C94	ECQG1H102KZ	0.001μF	1
(TF) C95	ECQV1H104JZ	0.1μF	1
C96, 97	ECQG1H332KZ	0.0033μF	2
○ C98	ECCR1H151J	150PF	1
○ C99	ECCR1H101J	100PF	1
(TF) C100～105	ECQV1H104JZ	0.1μF	6
○ C106, 107	ECKR1E473ZV	0.047μF	2
○ C108	ECCR1H101J	100PF	1
C109	ECQG1H472KZ	0.0047μF	1
○ C110	ECCR1H101J	100PF	1
C111	ECQG1H472KZ	0.0047μF	1
C112, 113	ECEA1HU010	1μF, 50V	2
C114	ECEA1CU470	47μF, 16V	1
C115	ECQG1H472KZ	0.0047μF	1
C116	ECEA1CU100	10μF, 16V	1
C117	ECQM1H473KV	0.047μF	1
C118	ECEA1CU100	10μF, 16V	1
C119	ECEA1CU470	47μF, 16V	1
C120	ECQG1H472KZ	0.0047μF	1
C121	ECQG1H332KZ	0.0033μF	1
(TF) C122	ECQV1H104JZ	0.1μF	1
C123	ECQG1H102KZ	0.001μF	1
C124	ECEA1CU100	10μF, 16V	1
(N) C125	ECEA1HN010S	1μF, 50V	1
○ C126	ECCR1H101J	100PF	1
(N) C127	ECEA1HN010S	1μF, 50V	1
○ C128, 129	ECCR1H101J	100PF	2
○ C130	ECEA1CN100	10μF, 16V	1
C134	ECEA1CU101	100μF, 16V	1
○ C135～137	ECKR1E473ZV	0.047μF	3
C138	ECEA1CU470	47μF, 16V	1
○ C139	ECKR1E473ZV	0.047μF	1
○ C140, 141	ECCR1H470J	47PF	2
C142	ECEA1CU470	47μF, 16V	1
○ C144	ECKR1E473ZV	0.047μF	1
C145	ECEA1HU010	1μF, 50V	1
○ C146, 147	ECCR1H220J	22PF	2
○ C148	ECCR1E473ZV	0.047μF	1
(K) C149	ECEA1HK010	1μF, 50V	1
○ C150, 151	ECKR1E473ZV	0.047μF	2

Ref. No.	Part No.	Description	Per/Set
C152~155	ECEA1CU470	47µF, 16V	4
Ⓚ C158	ECEA1HK010	1µF, 50V	1
Ⓣ C159, 160	ECQV1H104JZ	0.1µF	2
Ⓚ C161	ECEA1CN100S	10µF, 16V	1

MKB 1 MANUAL KEYBOARD 1 CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1 IC2	MN50020PGV	Gate Array not supplied	1
	DIODES			
S	D1~88	MA162A	MA150IR	88
	CERAMIC OSCILLATOR			
	X1	EF0FC4004A3	4MHz	1
	SWITCHES			
		SSPG6002A	Rubber Switch (6 continuous, dual type)	5
		SSPG7002A	Rubber Switch (7 continuous, dual type)	2
	RESISTORS			
	R1	ERDS2TJ101	100Ω	1
	R2	ERDS2TJ103	10KΩ	1
	R3	ERDS2TJ222	2.2KΩ	1
	R4	ERDS2TJ472	4.7KΩ	1
	CAPACITORS			
	○ C1	ECCR1H681J	680PF	1
	○ C2	ECKR1E473ZV	0.047µF	1
	○ C3	ECCR1H681J	680PF	1
	C4	ECEA1CU470	47µF, 16V	1

MKB 2 MANUAL KEYBOARD 2 CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	DIODES			
S	D89~176	MA162A	MA150IR	88
	COMPONENT COMBINATION			
	Z1	EXBP88332M	3.3KΩ×8	1
	SWITCHES			
		SSPG6002A	Rubber Switch (6 continuous, dual type)	5
		SSPG7002A	Rubber Switch (7 continuous, dual type)	2

AS AMP & POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1	SVIGS4132M2M	Power Amplifier	1
	IC2	SVIGM5291P	Switching Regulator Control	1
	IC3	SVIGM5F7815	Voltage Regulator	1
	IC4	SVIGM5F7915	Voltage Regulator	1
	TRANSISTORS			
S	Q1, 2	2SC2320LFG	2SC1310FG	2
S	Q3	2SA1015-GR	2SA933STRS	1
	Q4	2SB953AQP		1
	DIODES			
	D1, 2 ⚠	SVDGERA1502Y	Rectifier	2
	D3~6 ⚠	SVDS3V20	Rectifier	4
	D7, 8	MA165TA5		2
	D9	SVDGRK14		1
	D10	MA2062LF	Zener	1
	COILS & LINE FILTER			
	L1 ⚠	SLQG10W2D1	10µH	1
	L2 ⚠	SLTGLF3	Line Filter	1
	L3	SLCG2A121TZ		1
	SWITCH			
	SW1 ⚠	SSRG100A	Voltage Selector, Except for [M][MC]	1
	JACK			
	⚠	SJVD0203B	AC Inlet	1
	FUSES			
	F1 ⚠	XBA2C25TB0	T2.5A, 250V	1
	F1 M MC ⚠	XBA1C40NU100	4A, 125V, [M][MC] only	1
	F2, 3 ⚠	XBA2C12TB0	T1.25A, 250V	2
	RESISTORS			
	R1~3	ERDS2TJ103	10KΩ	3
	R4	ERDS2TJ102	1KΩ	1
	R5	ERDS2TJ101	100Ω	1
	R6, 7	ERDS2TJ223	22KΩ	2
	R8	ERDS2TJ473	47KΩ	1
	R9	ERDS2TJ472	4.7KΩ	1
	R10	ERDS2TJ155	1.5MΩ	1
	R11, 12	ERDS2TJ105	1MΩ	2
	Ⓕ R13 ⚠	ERD25FVJ4R7	4.7Ω, 1/4W, Fuse Type	1
	Ⓕ R14 ⚠	ERX1ANJ1R0	1Ω, 1W	1
	R15	ERDS2TJ101	100Ω	1
	Ⓕ R16 ⚠	ERG1ANJ221	220Ω, 1W	1
	R17	ERDS2TJ332	3.3KΩ	1
	R18	ERDS2TJ102	1KΩ	1
	Ⓕ R19 ⚠	ERD25FVJ680	68Ω, 1/4W	1
	R20	ERDS2TJ472	4.7KΩ	1
	R21	ERDS2TJ332	3.3KΩ	1
	R22	ERDS2TJ222	2.2KΩ	1
	R23	ERDS2TJ473	47KΩ	1
	R24	ERDS2TJ222	2.2KΩ	1
	R25, 26	ERDS2TJ152	1.5KΩ	2
	Ⓕ R27 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W	1
	R28	ERDS2TJ472	4.7KΩ	1
	R29	ERDS2TJ332	3.3KΩ	1
	R30	ERDS2TJ222	2.2KΩ	1
	R31	ERDS2TJ473	47KΩ	1

Ref. No.	Part No.	Description	Per/Set
R32, 33	ERDS2TJ152	1.5KΩ	2
R34	ERDS2TJ222	2.2KΩ	1
R35~37	ERDS2TJ102	1KΩ	3
R38	ERDS2TJ274	270KΩ	1
Ⓕ R39 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W	1
Ⓕ R40 ⚠	ERD25FVJ4R7	4.7Ω, 1/4W, Fuse Type	1
CAPACITORS			
○ C1 ⚠	ECKCVA1472MF	4700PF, Line Capacitor	1
C2 ⚠	ECQU2A104MN	0.1µF, 250V, Across-the-line Capacitor	1
C3, 4	ECEA1VU332	3300µF, 35V	2
C5	ECEA1CU100	10µF, 16V	1
C6	ECEA1HU010	1µF, 50V	1
C7	ECEA1HU2R2	2.2µF, 50V	1
C8	ECEA1HU470	47µF, 50V	1
C9	ECQG1H102KZ	0.001µF	1
C10	ECEA0JU102	1000µF, 6.3V	1
○ C11	ECKR1E473ZV	0.047µF	1
Ⓝ C13	ECEA1CN100S	10µF, 16V	1
○ C14	ECCR1H101J	100PF	1
Ⓝ C15	ECEA1CN100S	10µF, 16V	1
C16	ECEA1EU470	47µF, 25V	1
Ⓣ C17	ECQV1H104JZ	0.1µF	1
Ⓝ C18	ECEA1CN100S	10µF, 16V	1
○ C19	ECCR1H101J	100PF	1
Ⓝ C20	ECEA1CN100S	10µF, 16V	1
C21	ECEA1EU470	47µF, 25V	1
C22	ECEA1VU100	10µF, 35V	1
Ⓣ C23	ECQV1H104JZ	0.1µF	1
C26, 27	ECEA1VU100	10µF, 35V	2
C28	ECEA1VU221	220µF, 35V	1
C29 ⚠	ECQU2A104MN	0.1µF, 250V, Across-the-line Capacitor	1

HP HEADPHONES CIRCUIT

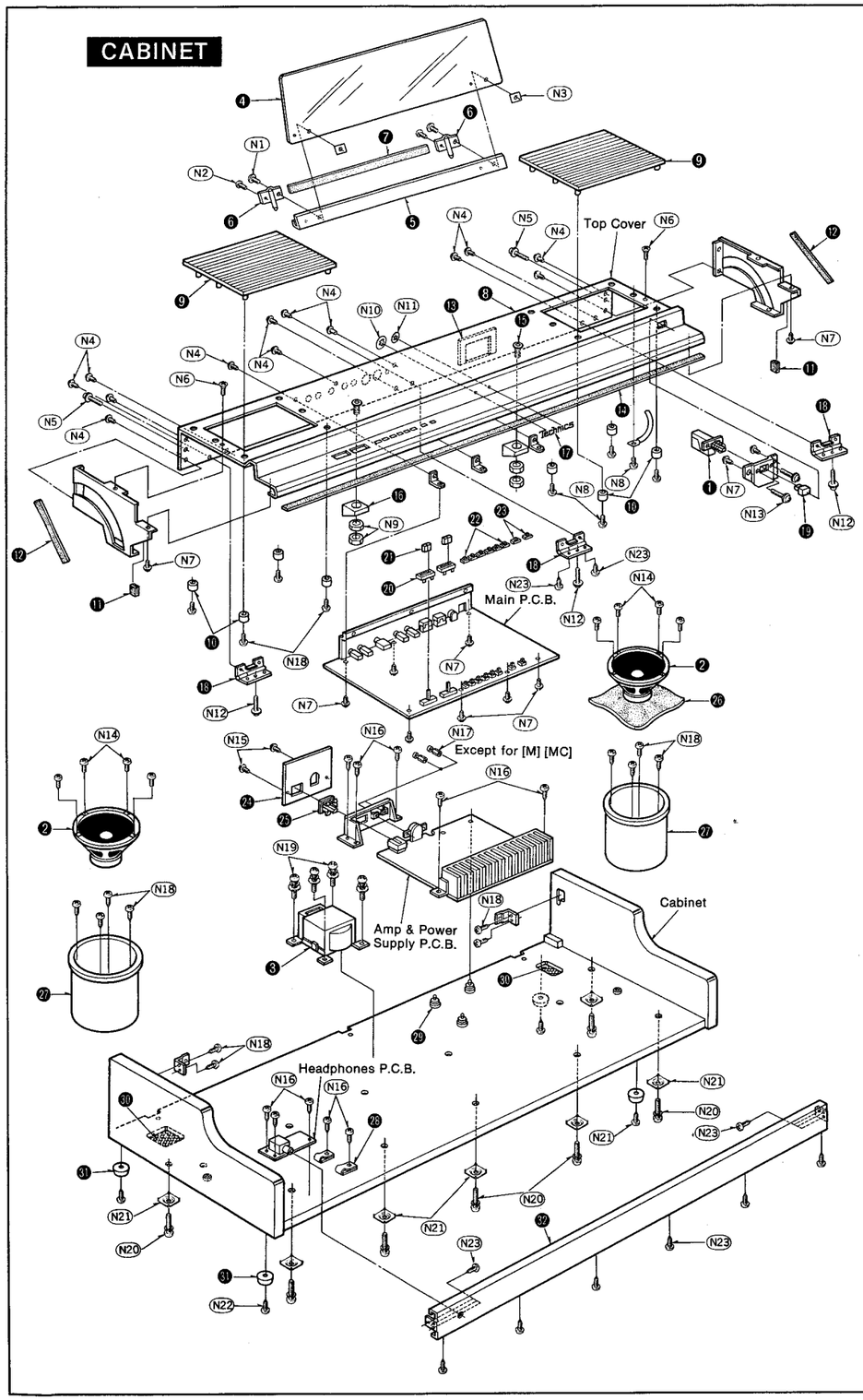
Ref. No.	Part No.	Description	Per/Set
COIL			
L1	SLQG15W33AP		1
JACK			
JK1	SJJG100A	Headphones	1
RESISTORS			
Ⓕ R1, 2 ⚠	ERD50FJ331	330Ω, 1/2W	2
CAPACITORS			
○ C1~3	ECCR1H681J	680PF	1

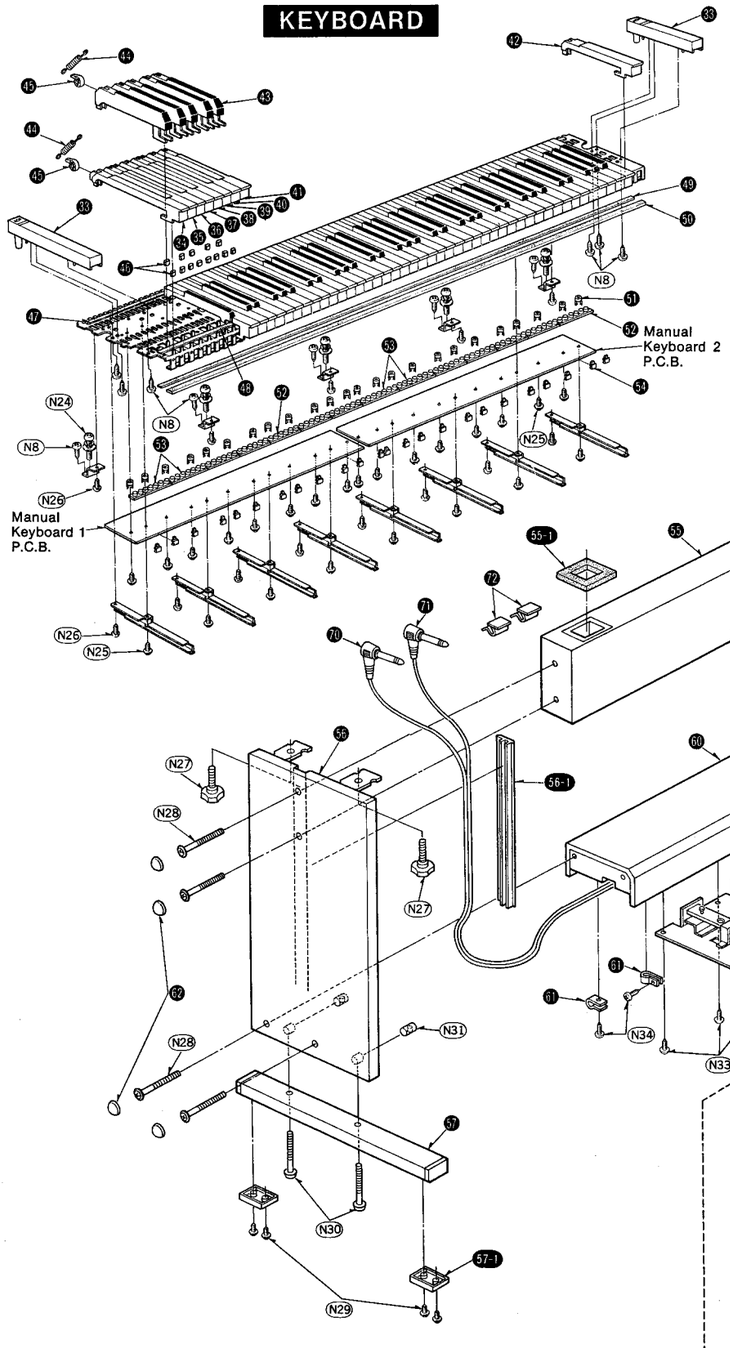
■ WIRING PARTS (See wiring connection diagram on page II-1, II-2)

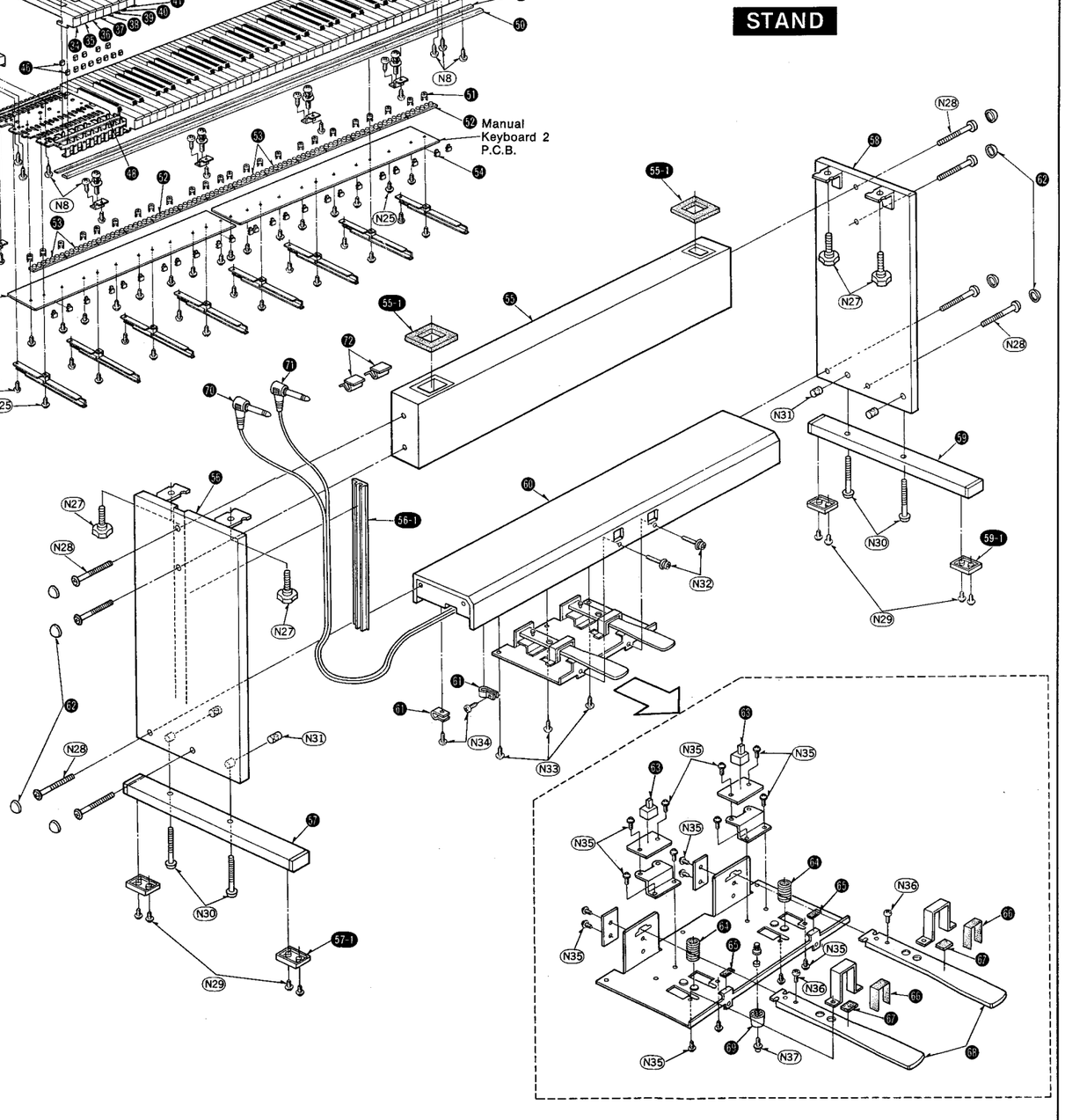
Ref. No.	Part No.	Description	Per/Set
○	SWKG0237ZA	Connector with Wire	1
○	SWKG0698SSA	Connector with Wire	1
○	SWKG0699ZA	Connector with Wire	1
○	SWKG0895ZA	Connector with Wire	1
○	SWKG152SSA	Connector with Wire	1

EXPLODED VIEWS OF CABINET

NOTES: 1. The following parts will not be supplied as repair parts.
(• Cabinet Ass'y, • Top Cover, • Metallic parts without number indications)
2. P.C.B. Ass'y are mentioned in the electrical parts list.







REPLACEMENT PARTS LIST.....Mechanical Parts

Notes:

1. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. ○ mark are new parts.
3. For part No. with area mark, check the area when placing an order.

■ CABINET & CHASSIS PARTS

	Ref. No.	Part No.	Description	Per/Set
		SWITCH		
	1 ⚠	ESB8213V	Power Switch	1
		SPEAKERS		
	2	EAS16PL403B	16cm, 8Ω	2
		TRANSFORMERS		
	3 ⚠	SLTG5M30	Power Transformer	1
	3 M MC ⚠	SLTG5M31	Power Transformer, [M][MC] only	1
		CABINET PARTS		
	4	SKGG1B103A	Clear Panel } Music Rack	1
	5	SGXG2361A	Ornament } Music Rack	1
	6	SBLG230A	Stay } Music Rack	2
○	7	SHRG7960A	Sponge } Music Rack	1
○	8	SGWG1800A	Top Cover	1
○	9	SYWG6080A	Speaker Grille	2
○	9 M	SYWG6080B	Speaker Grille, [M] only	2
○	10	SHRG9820A	Spacer, for Speaker Grille	8
○	11	SHSG4980A	Felt	2
○	12	SHSG3120A	Felt	2
	13	SHSG3100A	Felt	1
	14	SHSG3060A	Felt (green)	1
	15	SHRG9790A	Sleeve } for Music Rack	2
	16	SHRG9800A	Spacer } for Music Rack	2
	17	SGBG140A	Technics Badge	1
	18	SBHG180A	Hinge	3
	19	SBCG110B	Button, for Power Switch	1
	20	SGEG260A	Ornament } for Sliding Volumer	2
	21	SBNG7050A	Knob } for Sliding Volumer	2
	22	SBCG250C	Push Button (black)	6
	23	SBCG250B	Push Button (dark grey)	2
	24	SMKG3050A	AC Panel	1
	24 M MC	SMKG3051A	AC Panel, [M][MC] only	1
	25	SJS9231A	AC Inlet Cover	1
	25 XL XR	SJS9334A	AC Inlet Cover, [XL][XR] only	1
	26	SHSG9160A	Sound Absorbing Material	1
○	27	SKZG9310A	Speaker Box	2
	28	SHRG1070A	Cord Clamper	2
	29	SHRG9510A	P.C.B. Holder	3
○	30	SGMG200A	Net	2
	31	SKLG247-1	Foot	4
○	32	SGXG2400B	Ornament	1
	33	SGWG2200A	End Cover Panel	2
	33 M	SGWG2200B	End Cover Panel, [M] only	2
		SCREWS & WASHERS		
	N1	XTB4+8FZ	Screw	2
	N2	XTB3+8JFZ	Screw	2
	N3	SNEG260B	Screw	2
○	N4	XTW3+8LFZ	Screw	13
	N5	SNEG1880A	Screw, with Washer	2
○	N6	XTS3+8C	Screw	2
	N7	XTV3+8B	Screw	11
	N8	XTB4+12A	Screw	20

	Ref. No.	Part No.	Description	Per/Set
○	N9	SNEG1840A	Nut	4
○	N10	SNEG1780A	Speed-Nut	1
○	N11	SNEG1770A	Speed-Nut	1
	N12	XYN3+F14FZ	Screw, with Washer	3
	N13	XYN3+F10FZ	Screw, with Washer	2
	N14	XTW3+12Q	Screw	8
	N15	XTW3+8JFZ	Screw	2
	N16	XTB35+12A	Screw	10
	N17	SNEG1700A	Nylon Latch, Except for [M][MC]	2
	N18	XTB35+16A	Screw	12
	N19	XYN4+F14	Screw, with Washer	4
○	N20	SNEG1800A	Screw, with Washer	7
	N21	SNEG150A	Washer	7
	N22	XTB35+20A	Screw	4
	N23	XTB35+12AFZ	Screw	14
	N24	XYN5+F16	Screw, with Washer	5

■ MANUAL KEYBOARD

	Ref. No.	Part No.	Description	Per/Set
	34	STBG1932A	White Key (First octave A Key)	1
	35	STBG1942A	White Key (B Key)	8
	36	STBG1952A	White Key (C Key)	7
	37	STBG1962A	White Key (D Key)	7
	38	STBG1972A	White Key (E Key)	7
	39	STBG1982A	White Key (F Key)	7
	40	STBG1992A	White Key (G Key)	7
	41	STBGA1012A	White Key (A Key)	7
	42	STBGA1022A	White Key (Top octave C Key)	1
	43	STBG2912A	Black Key	36
	44	SUSG480A	Spring	88
	45	STBG9180A	Fulcrum	88
	46	SHGG9090A	Key Guide Rubber	88
	47	SHRG7770A	Sponge	1
	48	SHSG2653A	Felt	2
	49	SHSG2660A	Felt	1
	50	SHSG2670A	Felt	1
	51	SHRG9760A	P.C.B. Holder	24
	52	SSPG6002A	Rubber Switch (6 continuous)	10
	53	SSPG7002A	Rubber Switch (7 continuous)	4
	54	SHRG9750A	P.C.B. Holder	24
	N25	XTW3+10T	Screw	24
	N26	XTV3+8C	Screw	13

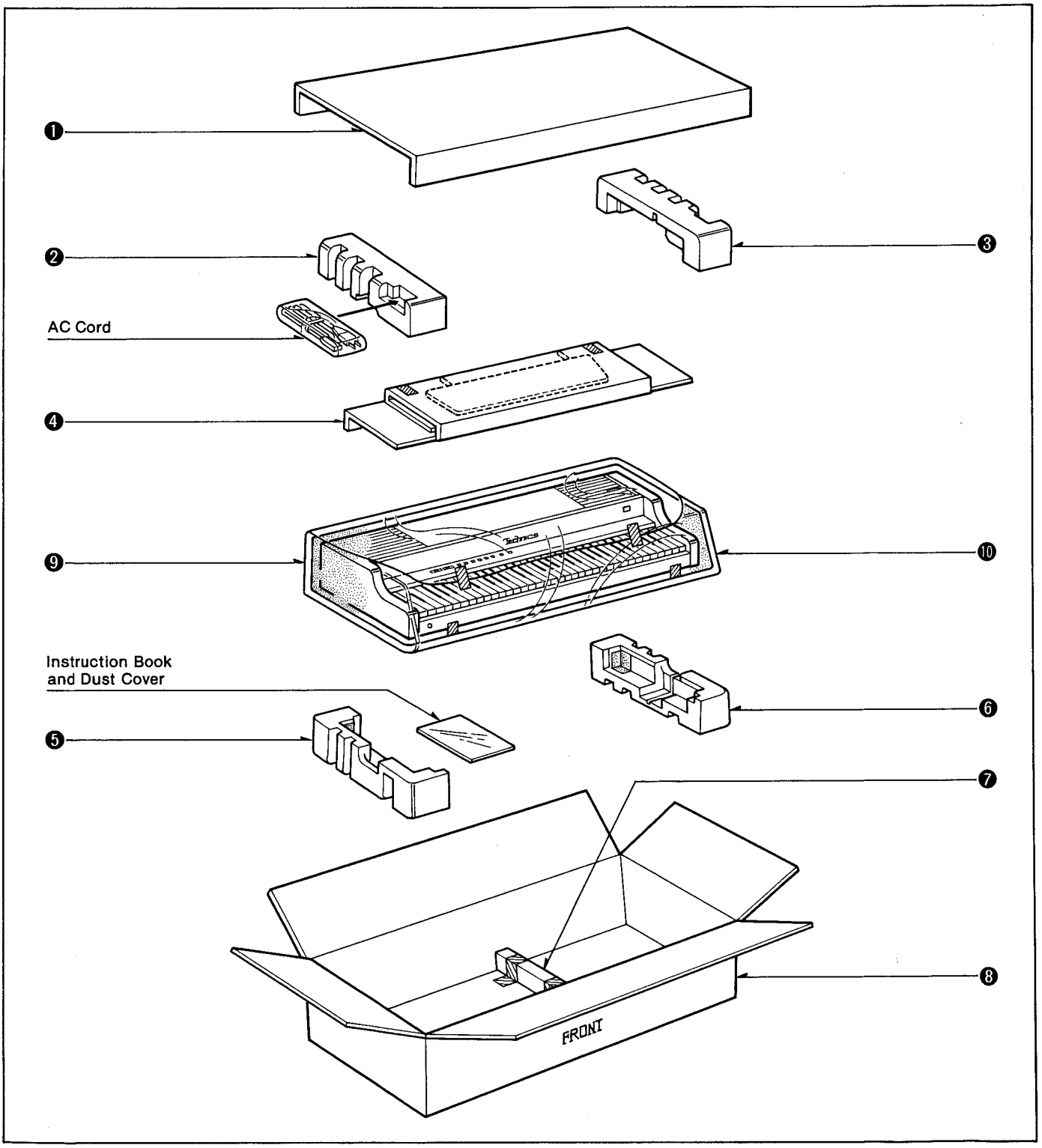
■ STAND (SZ-S81W)

Ref. No.	Part No.	Description	Per/Set
○ 55	SKZG9290A	Horn Loaded Cabinet Ass'y	1
○ 55-1	[SHRG7861A	Sponge	2
○ 56	SKSG1760A	Left Plank	1
○ 56-1	[SGXG2461A	Cord Cover	1
57	SGXG9200A	Leg	1
57-1	[SHRG2171A	Foot	2
○ 58	SKSG1770A	Right Plank	1
59	SGXG9210A	Leg	1
59-1	[SHRG2171A	Foot	2
60	SKZGD130A	Pedal Box	1
61	SHRG1070A	Cord Clamper	2
62	SNEG1760A	Cap	8
63	SSHG1034A	Push Switch	2
64	SUSG440A	Spring	2
65	SHSG2790A	Felt	2
66	SHSG2750A	Felt	2
67	SHSG2770A	Felt	2
68	STBG3100A	Pedal	2
69	SKLG160A	Foot	1
70	SWPG60A	Pedal Cord (black)	1
71	SWPG70A	Pedal Cord (gray)	1
72	SHRG9620A	Cord Clamper	2
SCREWS & WASHERS			
N27	SNEG1750A	Thumb Screw	4
N28	SNEG1720A	Bolt	8
N29	XTW3+16JFZ	Screw	8
N30	SNEG1720A	Bolt	4
N31	SNEG1710A	Nut	4
N32	XYN4+F16FZ	Screw, with Washer	2
N33	XTB35+14A	Screw	3
N34	XTT4+14A	Screw	2
N35	XTW3+8C	Screw	16
N36	XSN3+10	Screw	2
N37	XYN4+C25	Screw, with Washer	1
ACCESSORIES			
62, 72, N27, N28	SPBG3200A	Screw Kit	1
○	SQFGA20820	Instruction Sheet	1
PACKING			
○	SPNGS81WEA	Packing Parts Assembly	1

■ ACCESSORIES

Ref. No.	Part No.	Description	Per/Set
⚠	SJAG41	AC Cord	1
EK XS ⚠ XD	SJAG39	AC Cord, [EK][XS][XD] only	1
XL XR ⚠	SJAG61	AC Cord, [XL][XR] only	1
M MC ⚠ XT XV	SJAG62	AC Cord, [M][MC][XT][XV] only	1
XT X ⚠ XX XV	SJP5213-1	Attachment Plug, [XT][X][XX][XV] only	1
○ XD ⚠	SJPG1350A	Attachment Plug, [XD] only	1
○	SQFGA510	Instruction Book	1
○ EN EL	SQFGA520	Instruction Book, [EN][EL] only	1
○ M	SQFGA530	Instruction Book, [M] only	1
○	SQCG250A	Dust Cover	1
M	SQCG300A	Key Cover	1

PACKING



■ PACKING PARTS

	Ref. No.	Part No.	Description	Per/Set
○		SPNGPX6EB	Packing Parts Ass'y	1
○	1	SPNG1764A	Pad, for Top Cover	(1)
	2	SPNG5638A	Pad, Upper Left Side	(1)
	3	SPNG5639A	Pad, Upper Right Side	(1)
○	4	SPNG1747A	Packing Parts, for Music Rack	(1)
	5	SPNG5629A	Pad, Bottom Left Side	(1)
	6	SPNG5630A	Pad, Bottom Right Side	(1)
	7	SPNG5643A	Spacer	(1)
○	8	SPNG1760A	Carton Box	(1)
	9	SPHG1320A	Sheet, for Cabinet	1
	10	SPHG1110A	Polyethylene Bag	1